

Propuesta para la planeación y control de la  
producción de productos personalizados en la  
empresa Ecoempaques Corrugados en Bogotá.  
Proposal for the planning and control of the  
production of personalized products at the  
Ecoempaques Corrugados Enterprise in Bogotá.

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## ANEXOS

## ANEXO 1. PRONÓSTICOS

TABLA 1. CAJA PIZZA PEQUEÑA.

| Suavización exponencial simple Caja pizza pequeña |            |         |            |       |          |                  |          |        |
|---|------------|---------|------------|-------|----------|------------------|----------|--------|
|   | MES        | Ventas  | Pronóstico | Error | Error MA | Error Cuadrático | MAPE     |        |
| 2020  | MARZO      | 57333   | 66248      | -8915 | 8915     | 79477225         | 0,1555   |        |
|   | ABRIL      | 56230   | 58065      | -1835 | 1835     | 3368909          | 0,0326   |        |
|   | MAYO       | 52357   | 56381      | -4024 | 4024     | 16190981         | 0,0769   |        |
|   | JUNIO      | 57529   | 52688      | 4841  | 4841     | 23439187         | 0,0842   |        |
|   | JULIO      | 58425   | 57131      | 1294  | 1294     | 1673843          | 0,0221   |        |
|   | AGOSTO     | 69397   | 58319      | 11078 | 11078    | 122728655        | 0,1596   |        |
|   | SEPTIEMBRE | 79515   | 68487      | 11028 | 11028    | 121621101        | 0,1387   |        |
|   | OCTUBRE    | 79041   | 78609      | 432   | 432      | 186693           | 0,0055   |        |
|   | NOVIEMBRE  | 77115   | 79006      | -1891 | 1891     | 3573991          | 0,0245   |        |
|   | DICIEMBRE  | 72570   | 77270      | -4700 | 4700     | 22093046         | 0,0648   |        |
|   | 2021       | ENERO   | 68259      | 72956 | -4697    | 4697             | 22063499 | 0,0688 |
|   |            | FEBRERO | 67158      | 68645 | -1487    | 1487             | 2210936  | 0,0221 |
| MARZO   |            | 66295   | 67280      | -985  | 985      | 970552           | 0,0149   |        |
| ABRIL   |            |         | 66376      |       |          |                  |          |        |
| MAYO  |            |         | 66376      |       |          |                  |          |        |
| JUNIO   |            |         | 66376      |       |          |                  |          |        |
| JULIO   |            |         | 66376      |       |          |                  |          |        |
| AGOSTO  |            |         | 66376      |       |          |                  |          |        |
| SEPTIEMBRE  |            |         | 66376      |       |          |                  |          |        |
| OCTUBRE   |            |         | 66376      |       |          |                  |          |        |
| NOVIEMBRE   |            |         | 66376      |       |          |                  |          |        |
| DICIEMBRE   |            |         | 66376      |       |          |                  |          |        |
| MAPE  |            |         |            |       |          |                  | 7%       |        |
|   |            |         |            |       |          |                  | 4443     |        |

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| $\alpha$ | 0,9178397 |
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GRÁFICO 1. CAJA DE PIZZA PEQUEÑA

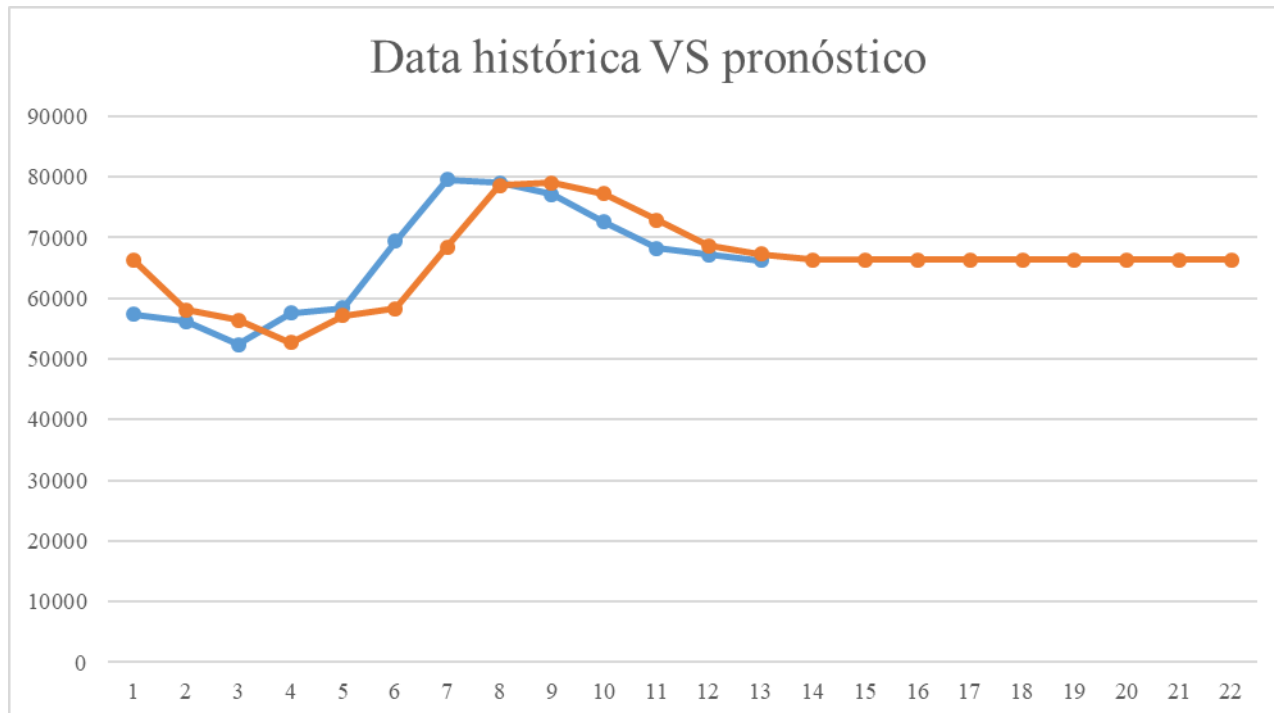


TABLA 2. CAJA DE PIZZA GRANDE

| Suavización exponencial simple caja pizza grande |            |         |            |        |          |                  |           |        |
|--|------------|---------|------------|--------|----------|------------------|-----------|--------|
|  | MES        | Ventas  | Pronóstico | Error  | Error MA | Error Cuadrático | MAPE      |        |
| 2020   | MARZO      | 50994   | 64217      | -13223 | 13223    | 174835523        | 0,2593    |        |
|  | ABRIL      | 53585   | 52813      | 772    | 772      | 595777           | 0,0144    |        |
|  | MAYO       | 54145   | 53479      | 666    | 666      | 443812           | 0,0123    |        |
|  | JUNIO      | 56349   | 54053      | 2296   | 2296     | 5270025          | 0,0407    |        |
|  | JULIO      | 65150   | 56033      | 9117   | 9117     | 83116626         | 0,1399    |        |
|  | AGOSTO     | 67530   | 63896      | 3634   | 3634     | 13207976         | 0,0538    |        |
|  | SEPTIEMBRE | 72159   | 67030      | 5129   | 5129     | 26306617         | 0,0711    |        |
|  | OCTUBRE    | 75179   | 71453      | 3726   | 3726     | 13880383         | 0,0496    |        |
|  | NOVIEMBRE  | 68734   | 74666      | -5932  | 5932     | 35193763         | 0,0863    |        |
|  | DICIEMBRE  | 76250   | 69550      | 6700   | 6700     | 44887670         | 0,0879    |        |
|  | 2021       | ENERO   | 62751      | 75328  | -12577   | 12577            | 158187206 | 0,2004 |
|  |            | FEBRERO | 66428      | 64481  | 1947     | 1947             | 3789422   | 0,0293 |
| MARZO  |            | 65561   | 66160      | -599   | 599      | 359022           | 0,0091    |        |
| ABRIL  |            |         | 65643      |        |          |                  |           |        |
| MAYO   |            |         | 65643      |        |          |                  |           |        |
| JUNIO  |            |         | 65643      |        |          |                  |           |        |
| JULIO  |            |         | 65643      |        |          |                  |           |        |
| AGOSTO   |            |         | 65643      |        |          |                  |           |        |
| SEPTIEMBRE                                       |            |         | 65643      |        |          |                  |           |        |
| OCTUBRE  |            |         | 65643      |        |          |                  |           |        |
| NOVIEMBRE  |            |         | 65643      |        |          |                  |           |        |
| DICIEMBRE  |            |         | 65643      |        |          |                  |           |        |
| MAPE   |            |         |            |        |          |                  | 8%        |        |
|  |            |         |            |        |          |                  | 5323      |        |

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| $\alpha$ | 0,8624217 |
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GRÁFICO 2. CAJA DE PIZZA GRANDE

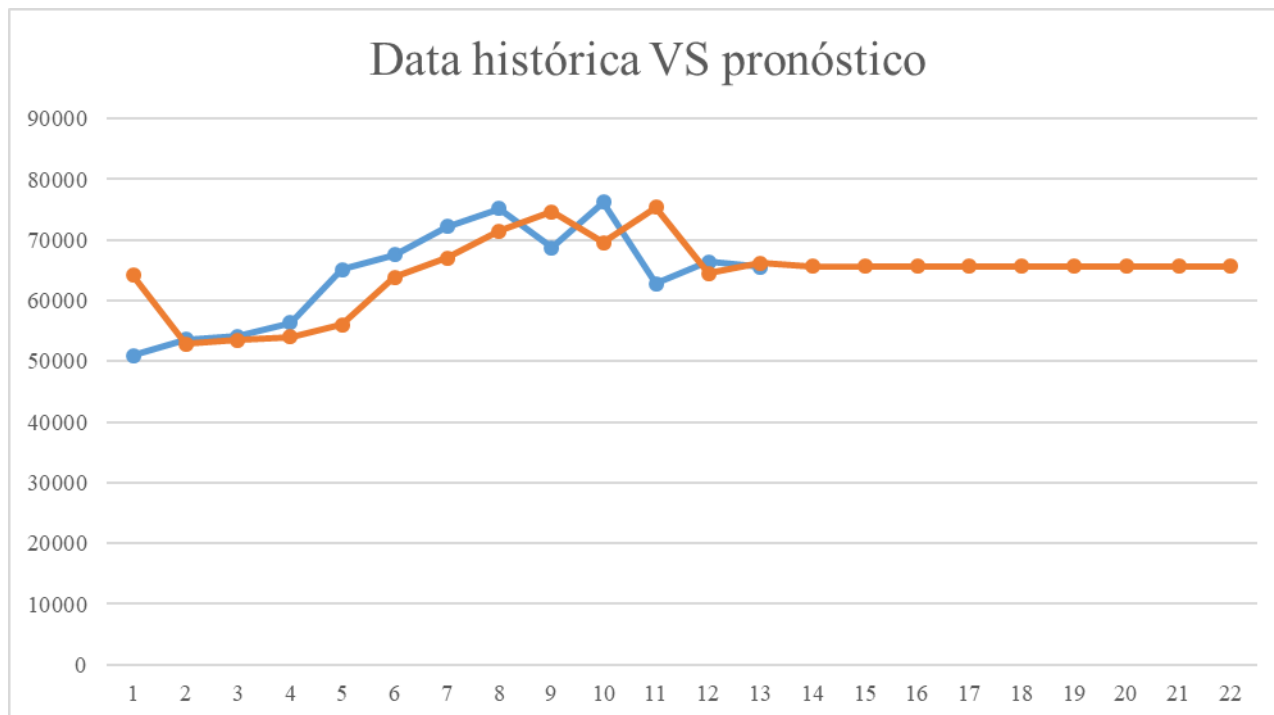


TABLA 3. CAJA DE PIZZA MEDIANA

| Suavización exponencial simple caja pizza mediana |            |            |       |          |                  |           |             |   |        |
|---|------------|------------|-------|----------|------------------|-----------|-------------|---|--------|
| MES   | Ventas     | Pronóstico | Error | Error MA | Error Cuadrático | MAPE      | $\alpha$    |   |        |
| 2020  | MARZO      | 58053      | 63739 | -5686    | 5686             | 32334095  | 0,0980      | 1 |        |
|   | ABRIL      | 57037      | 58053 | -1016    | 1016             | 1032256   | 0,0178      |   |        |
|   | MAYO       | 53031      | 57037 | -4006    | 4006             | 16048036  | 0,0755      |   |        |
|   | JUNIO      | 58429      | 53031 | 5398     | 5398             | 29138404  | 0,0924      |   |        |
|   | JULIO      | 53011      | 58429 | -5418    | 5418             | 29354724  | 0,1022      |   |        |
|   | AGOSTO     | 65635      | 53011 | 12624    | 12624            | 159365376 | 0,1923      |   |        |
|   | SEPTIEMBRE | 71547      | 65635 | 5912     | 5912             | 34951744  | 0,0826      |   |        |
|   | OCTUBRE    | 72519      | 71547 | 972      | 972              | 944784    | 0,0134      |   |        |
|   | NOVIEMBRE  | 71154      | 72519 | -1365    | 1365             | 1863225   | 0,0192      |   |        |
|   | DICIEMBRE  | 72551      | 71154 | 1397     | 1397             | 1951609   | 0,0193      |   |        |
|   | 2021       | ENERO      | 66619 | 72551    | -5932            | 5932      | 35188624    |   | 0,0890 |
|   |            | FEBRERO    | 66227 | 66619    | -392             | 392       | 153664      |   | 0,0059 |
| MARZO   |            | 62798      | 66227 | -3429    | 3429             | 11758041  | 0,0546      |   |        |
| ABRIL   |            |            | 62798 |          |                  |           |             |   |        |
| MAYO  |            |            | 62798 |          |                  |           |             |   |        |
| JUNIO   |            |            | 62798 |          |                  |           |             |   |        |
| JULIO   |            |            | 62798 |          |                  |           |             |   |        |
| AGOSTO  |            |            | 62798 |          |                  |           |             |   |        |
| SEPTIEMBRE  |            |            | 62798 |          |                  |           |             |   |        |
| OCTUBRE   |            |            | 62798 |          |                  |           |             |   |        |
| NOVIEMBRE   |            |            | 62798 |          |                  |           |             |   |        |
| DICIEMBRE   |            |            | 62798 |          |                  |           |             |   |        |
| <b>MAPE</b>                                       |            |            |       |          |                  |           | <b>7%</b>   |   |        |
|   |            |            |       |          |                  |           | <b>4165</b> |   |        |

GRÁFICA 3. CAJA DE PIZZA MEDIANA

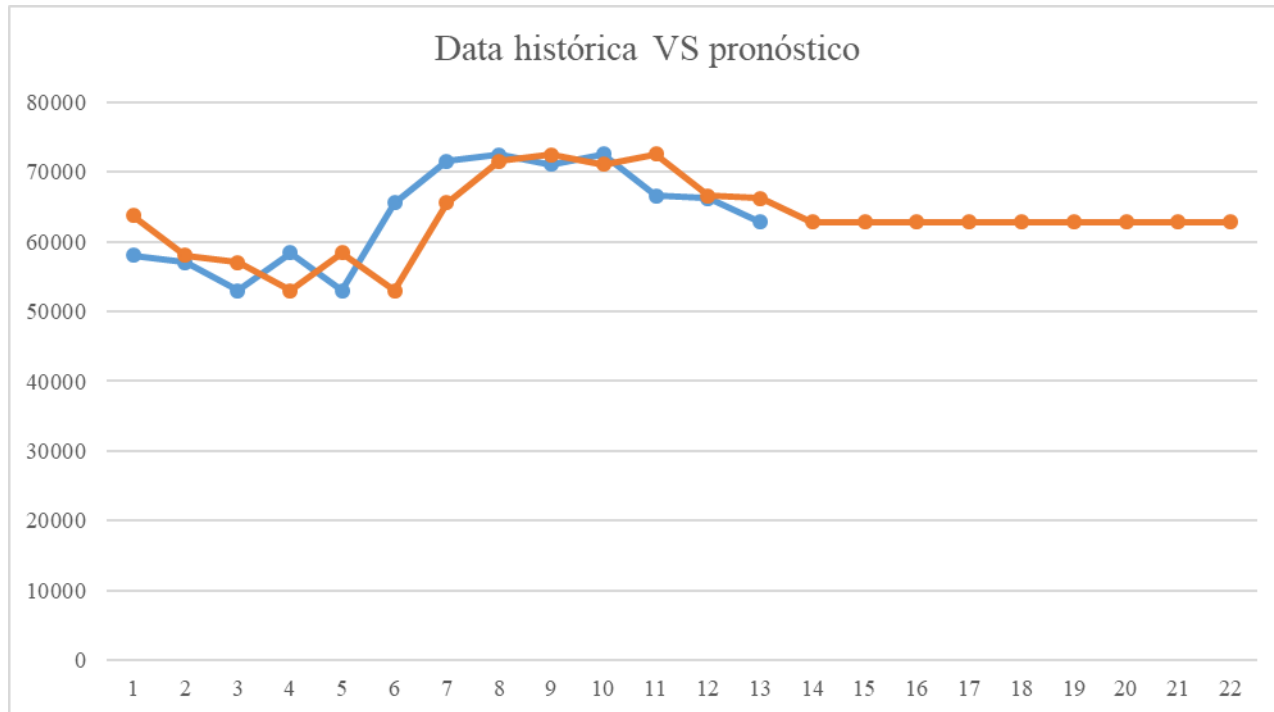


TABLA 4. CAJA DE ARCHIVO CON TAPA

| Suavización exponencial simple caja de archivo con tapa |            |         |            |       |          |                  |        |        |
|---|------------|---------|------------|-------|----------|------------------|--------|--------|
|   | MES        | Ventas  | Pronóstico | Error | Error MA | Error Cuadrático | MAPE   |        |
| 2020  | MARZO      | 4595    | 6738       | -2143 | 2143     | 4590801          | 0,4663 |        |
|   | ABRIL      | 4739    | 4741       | -2    | 2        | 4                | 0,0004 |        |
|   | MAYO       | 5413    | 4739       | 674   | 674      | 454084           | 0,1245 |        |
|   | JUNIO      | 5930    | 5367       | 563   | 563      | 316909           | 0,0949 |        |
|   | JULIO      | 5982    | 5892       | 90    | 90       | 8169             | 0,0151 |        |
|   | AGOSTO     | 6621    | 5976       | 645   | 645      | 416235           | 0,0974 |        |
|   | SEPTIEMBRE | 7493    | 6577       | 916   | 916      | 839038           | 0,1222 |        |
|   | OCTUBRE    | 7582    | 7431       | 151   | 151      | 22939            | 0,0200 |        |
|   | NOVIEMBRE  | 7869    | 7572       | 297   | 297      | 88403            | 0,0378 |        |
|   | DICIEMBRE  | 8717    | 7849       | 868   | 868      | 753898           | 0,0996 |        |
|   | 2021       | ENERO   | 7670       | 8658  | -988     | 988              | 975743 | 0,1288 |
|   |            | FEBRERO | 7898       | 7737  | 161      | 161              | 25808  | 0,0203 |
| MARZO   |            | 7080    | 7887       | -807  | 807      | 651324           | 0,1140 |        |
| ABRIL   |            |         | 7135       |       |          |                  |        |        |
| MAYO  |            |         | 7135       |       |          |                  |        |        |
| JUNIO   |            |         | 7135       |       |          |                  |        |        |
| JULIO   |            |         | 7135       |       |          |                  |        |        |
| AGOSTO  |            |         | 7135       |       |          |                  |        |        |
| SEPTIEMBRE  |            |         | 7135       |       |          |                  |        |        |
| OCTUBRE   |            |         | 7135       |       |          |                  |        |        |
| NOVIEMBRE   |            |         | 7135       |       |          |                  |        |        |
| DICIEMBRE   |            |         | 7135       |       |          |                  |        |        |
| MAPE  |            |         |            |       |          |                  | 10%    |        |
|   |            |         |            |       |          |                  | 736    |        |

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| $\alpha$ | 0,9318154 |
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GRÁFICO 4. CAJA DE ARCHIVO CON TAPA

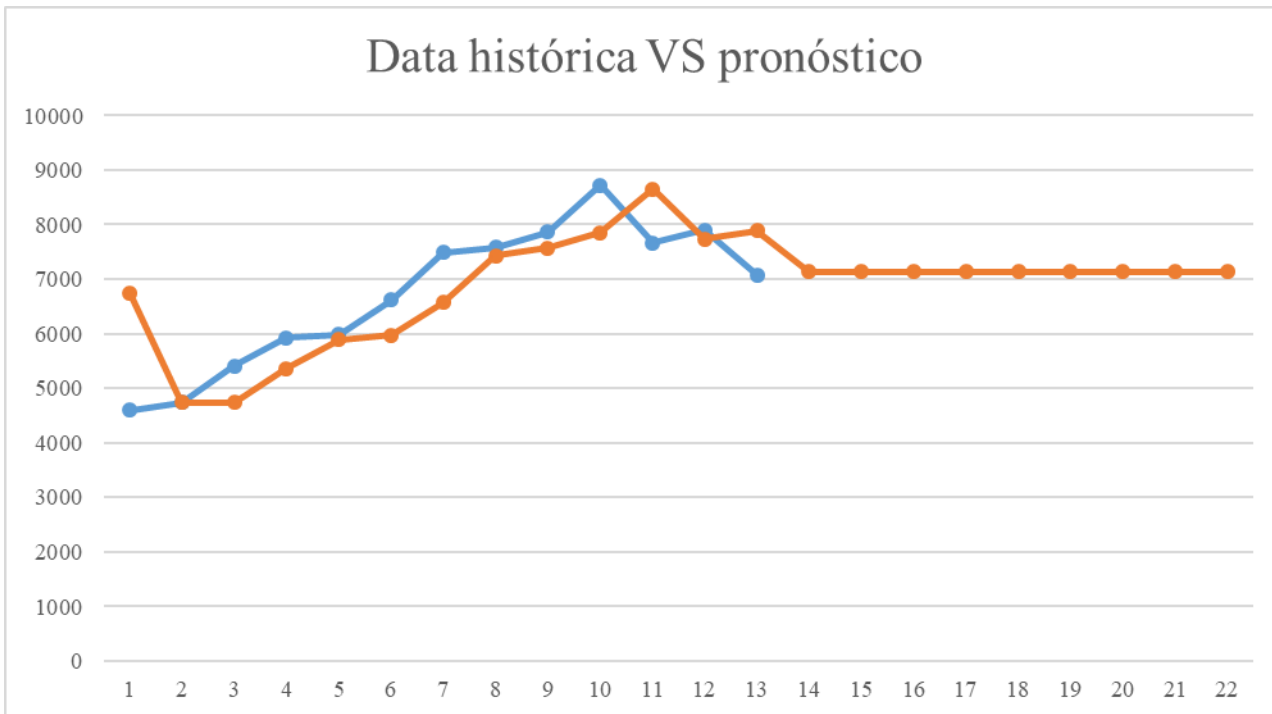
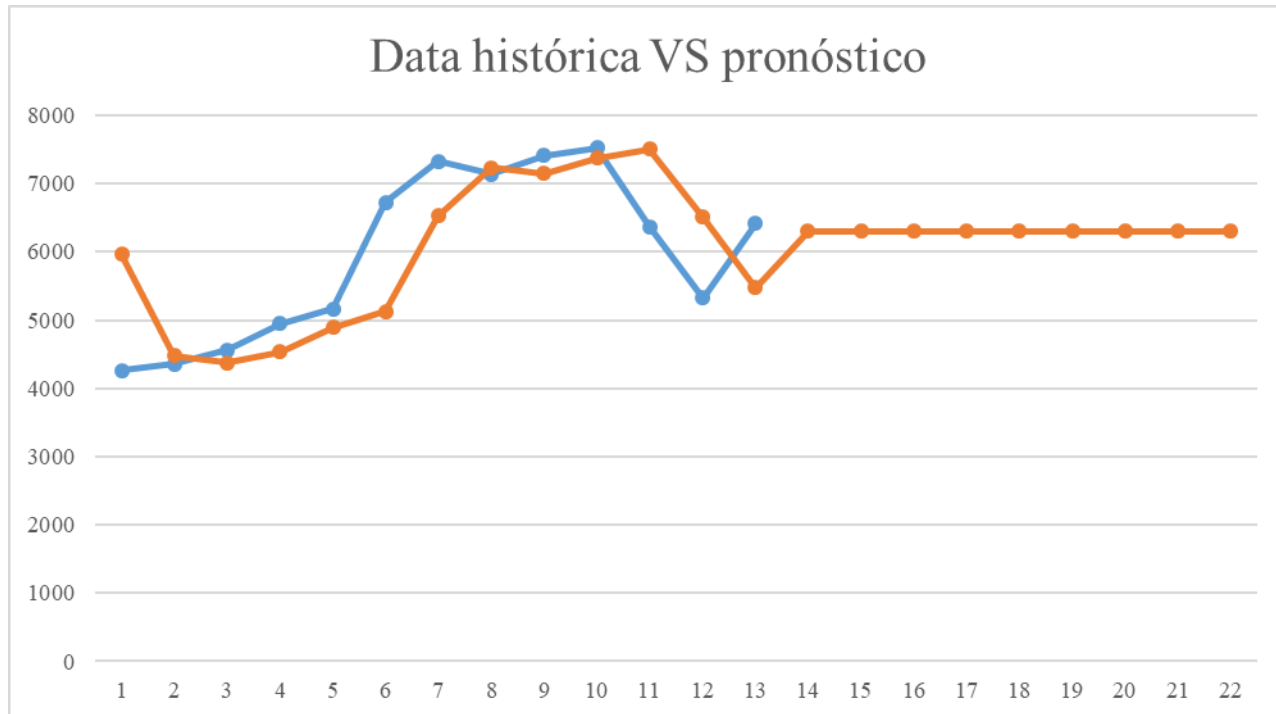


TABLA 5. CAJA DE ARCHIVO ESTÁNDAR

| Suavización exponencial simple caja de archivo sin tapa o estándar |            |         |            |       |          |                  |         |        |
|--|------------|---------|------------|-------|----------|------------------|---------|--------|
|  | MES        | Ventas  | Pronóstico | Error | Error MA | Error Cuadrático | MAPE    |        |
| 2020   | MARZO      | 4265    | 5963       | -1698 | 1698     | 2882049          | 0,3980  |        |
|  | ABRIL      | 4358    | 4477       | -119  | 119      | 14240            | 0,0274  |        |
|  | MAYO       | 4560    | 4372       | 188   | 188      | 35166            | 0,0411  |        |
|  | JUNIO      | 4945    | 4537       | 408   | 408      | 166507           | 0,0825  |        |
|  | JULIO      | 5165    | 4894       | 271   | 271      | 73451            | 0,0525  |        |
|  | AGOSTO     | 6722    | 5131       | 1591  | 1591     | 2532336          | 0,2367  |        |
|  | SEPTIEMBRE | 7329    | 6524       | 805   | 805      | 648468           | 0,1099  |        |
|  | OCTUBRE    | 7134    | 7229       | -94   | 94       | 8892             | 0,0132  |        |
|  | NOVIEMBRE  | 7407    | 7146       | 261   | 261      | 68243            | 0,0353  |        |
|  | DICIEMBRE  | 7522    | 7375       | 147   | 147      | 21637            | 0,0196  |        |
|  | 2021       | ENERO   | 6370       | 7503  | -1133    | 1133             | 1283790 | 0,1779 |
|  |            | FEBRERO | 5323       | 6512  | -1188    | 1188             | 1412087 | 0,2232 |
| MARZO  |            | 6416    | 5472       | 944   | 944      | 891068           | 0,1471  |        |
| ABRIL  |            |         | 6298       |       |          |                  |         |        |
| MAYO   |            |         | 6298       |       |          |                  |         |        |
| JUNIO  |            |         | 6298       |       |          |                  |         |        |
| JULIO  |            |         | 6298       |       |          |                  |         |        |
| AGOSTO   |            |         | 6298       |       |          |                  |         |        |
| SEPTIEMBRE   |            |         | 6298       |       |          |                  |         |        |
| OCTUBRE  |            |         | 6298       |       |          |                  |         |        |
| NOVIEMBRE  |            |         | 6298       |       |          |                  |         |        |
| DICIEMBRE  |            |         | 6298       |       |          |                  |         |        |
| MAPE   |            |         |            |       |          |                  | 12%     |        |
|  |            |         |            |       |          |                  | 758     |        |

|          |          |
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| $\alpha$ | 0,875255 |
|----------|----------|

GRÁFICO 5. CAJA DE ARCHIVO ESTÁNDAR



## ANEXO 2. CAPACIDADES

TABLA 6. TIPOS DE CAPACIDADES

| Capacidades                                   | Valor (h/año)    |
|---|------------------|
| <b>Capacidad Teórica <math>CtT</math></b>     | <b>43800</b>     |
| Capacidad por cada $NSti$                     | 8760             |
| <b>Capacidad instalada <math>Ci r</math></b>  | <b>43687</b>     |
| Capacidad instalada troquel                   | 8742,67          |
| Capacidad instalada grafadora                 | 8738,33          |
| Capacidad instalada flexográfica              | 8721,00          |
| Capacidad instalada pegadora                  | 8742,67          |
| Capacidad instalada zunchadora                | 8742,67          |
| <b>Capacidad disponible <math>Cd r</math></b> | <b>4024</b>      |
| Capacidad disponible troquel                  | 809,92           |
| Capacidad disponible grafadora                | 805,59           |
| Capacidad disponible flexográfica             | 788,26           |
| Capacidad disponible pegadora                 | 809,92           |
| Capacidad disponible zunchadora               | 809,92           |
| Capacidad necesaria $Cn$                      | <b>2.346.574</b> |
| Capacidad utilizada $Cu$                      | <b>2.346.574</b> |

TABLA 7. ÍTEMS PARA CÁLCULOS DE CAPACIDADES

| Ítems   | Valor |
|---|-------|
| Sítios de trabajo $NSti$                          | 5     |
| Días del año ( $d \cdot a$ )                      | 365   |
| Días hábiles de trabajo ( $d \cdot h$ )           | 300   |
| Horas diarias ( $h \cdot d$ )                     | 24    |
| Horas por turno ( $h \cdot t$ )                   | 8     |
| Número de turnos de trabajo ( $n \cdot t$ )       | 1     |
| Gama de productos                                 | 3     |
| Cantidad planeada de productos $QPLij$            | 7.333 |
| Tiempo estimado de fabricación de producto $Stij$ | 278   |
| Cantidad realizada de productos $Qrij$            | 7.333 |
| Tiempo de fabricación real $Trij$                 | 278   |

TABLA 8. PÉRDIDAS DE TIEMPO

| Perdidas de tiempo  | Valor (h/año) |
|---|---------------|
| Tiempo de mantenimiento <i>G1</i>   | 112,67        |
| Máquina de Troquel <i>g1</i>  | 17,33         |
| Máquina Grafadora <i>g2</i>   | 21,67         |
| Máquina Flexográfica <i>g3</i>  | 39,00         |
| Máquina Pegadora <i>g4</i>  | 17,33         |
| Máquina Zunchadora <i>g5</i>  | 17,33         |
| Tiempo de Ausentimo <i>G2</i> (10% de capacidad instalada)                | 4369          |
| Tiempo de Factores organizacionales <i>G3</i> (5% de capacidad instalada) | 2184          |
| Tiempo por factores externos <i>G4</i> (3% de capacidad instalada)        | 1311          |
| Tiempos perdidos totales por <i>NSti</i>                                  | 1573          |

TABLA 9. TIEMPO PARA CÁLCULO DE CAPACIDADES

| Tiempo           | Medida |
|------------------|--------|
| Semanas año      | 52     |
| 1 hora (minutos) | 60     |

### ANEXO 3. MPS Y MRP

TABLA 10.

| UNIDADES FAMILIA DE PRODUCTO (PLAN AGREGADO) | PORCENTAJE DE VENTAS CAJA DE PIZZA PEQUEÑA | 26%    | PORCENTAJE DE VENTAS CAJA DE PIZZA GRANDE | 25%    | PORCENTAJE DE VENTAS CAJA DE PIZZA MEDIANA | 25%   | PORCENTAJE DE VENTAS CAJA DE ARCHIVO CON TAPA | 20% | PORCENTAJE DE VENTAS CAJA DE ARCHIVO SIN TAPA O ESTÁNDAR | 5% |
|--|--|--------|---|--------|--|-------|---|-----|--|----|
| MARZO  | 206.904                                    | 66.248 | 64.217                                    | 63.739 | 6.738                                      | 5.963 |   |     |  |    |
| ABRIL  | 178.150                                    | 58.065 | 52.813                                    | 58.053 | 4.741                                      | 4.477 |   |     |  |    |
| MAYO   | 176.008                                    | 56.381 | 53.479                                    | 57.037 | 4.739                                      | 4.372 |   |     |  |    |
| JUNIO  | 169.676                                    | 52.688 | 54.053                                    | 53.031 | 5.367                                      | 4.537 |   |     |  |    |
| JULIO  | 182.379                                    | 57.131 | 56.033                                    | 58.429 | 5.892                                      | 4.894 |   |     |  |    |
| AGOSTO                                       | 186.332                                    | 58.319 | 63.896                                    | 53.011 | 5.976                                      | 5.131 |   |     |  |    |
| SEPTIEMBRE                                   | 214.253                                    | 68.487 | 67.030                                    | 65.635 | 6.577                                      | 6.524 |   |     |  |    |
| OCTUBRE                                      | 236.268                                    | 78.609 | 71.453                                    | 71.547 | 7.431                                      | 7.229 |   |     |  |    |
| NOVIEMBRE                                    | 240.909                                    | 79.006 | 74.666                                    | 72.519 | 7.572                                      | 7.146 |   |     |  |    |
| DICIEMBRE                                    | 233.198                                    | 77.270 | 69.550                                    | 71.154 | 7.849                                      | 7.375 |   |     |  |    |
| ENERO  | 236.997                                    | 72.956 | 75.328                                    | 72.551 | 8.658                                      | 7.503 |   |     |  |    |
| FEBRERO                                      | 213.994                                    | 68.645 | 64.481                                    | 66.619 | 7.737                                      | 6.512 |   |     |  |    |
| MARZO  | 213.026                                    | 67.280 | 66.160                                    | 66.227 | 7.887                                      | 5.472 |   |     |  |    |
| TOTAL  | 208.250                                    | 66.376 | 65.643                                    | 62.798 | 7.135                                      | 6.298 |   |     |  |    |

TABLA 11. DATOS PARA EL MPS

|  |        |
|--|--------|
| Tamaño lote cajas para pizza Pequeña             | 14.000 |
| Tamaño lote cajas para pizza Grande              | 14.000 |
| Tamaño lote cajas para pizza Mediana             | 14.000 |
| Tamaño lote cajas de archivo con tapa            | 1.000  |
| Tamaño lote cajas de archivo sin tapa o estándar | 1.000  |



TABLA 12. MPS

| SEMANAS                             |                     | 10     | 11     | 12     | 13     | 14     | 15     | 16     |
|-------------------------------------|---------------------|--------|--------|--------|--------|--------|--------|--------|
| CAJA DE PIZZA PEQUEÑA               | Inventario Inicial  | 14.000 | 2.562  | 5.124  | 7.686  | 10.248 | 7.861  | 5.474  |
|                                     | Pronósticos         | 16.562 | 16.562 | 16.562 | 16.562 | 11.613 | 11.613 | 11.613 |
|                                     | Pedidos de clientes | 14.333 | 14.333 | 14.333 | 14.333 | 11.246 | 11.246 | 11.246 |
|                                     | Inventario final    | 2.562  | 5.124  | 7.686  | 10.248 | 7.861  | 5.474  | 3.087  |
|                                     | MPS                 | 0      | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 |
| CAJA DE PIZZA GRANDE                | Inventario Inicial  | 14.000 | 11.946 | 11.946 | 11.946 | 11.946 | 3.283  | 17.283 |
|                                     | Pronósticos         | 16.054 | 16.054 | 16.054 | 16.054 | 10.563 | 10.563 | 10.563 |
|                                     | Pedidos de clientes | 12.749 | 12.749 | 12.749 | 12.749 | 10.717 | 10.717 | 10.717 |
|                                     | Inventario final    | 11.946 | 11.946 | 11.946 | 11.946 | 3.283  | 17.283 | 3.283  |
|                                     | MPS                 | 14000  | 14000  | 14000  | 14000  | 0      | 14000  | 0      |
| CAJA DE PIZZA MEDIANA               | Inventario Inicial  | 14.000 | 12.065 | 12.065 | 12.065 | 12.065 | 2.389  | 16.389 |
|                                     | Pronósticos         | 15.935 | 15.935 | 15.935 | 15.935 | 11.611 | 11.611 | 11.611 |
|                                     | Pedidos de clientes | 14.513 | 14.513 | 14.513 | 14.513 | 11.407 | 11.407 | 11.407 |
|                                     | Inventario final    | 12.065 | 12.065 | 12.065 | 12.065 | 2.389  | 16.389 | 2.389  |
|                                     | MPS                 | 14000  | 14000  | 14000  | 14000  | 0      | 14.000 | 0      |
| CAJA DE ARCHIVO CON TAPA            | Inventario Inicial  | 1.000  | 316    | 316    | 316    | 316    | 1.052  | 52     |
|                                     | Pronósticos         | 1.684  | 1.684  | 1.684  | 1.684  | 948    | 948    | 948    |
|                                     | Pedidos de clientes | 1.149  | 1.149  | 1.149  | 1.149  | 948    | 948    | 948    |
|                                     | Inventario final    | 316    | 316    | 316    | 316    | 1.052  | 52     | 1.052  |
|                                     | MPS                 | 1000   | 1.000  | 1.000  | 1.000  | 1000   | 0      | 1000   |
| CAJA DE ARCHIVO SIN TAPA O ESTÁNDAR | Inventario Inicial  | 1.000  | 509    | 509    | 509    | 509    | 1.105  | 105    |
|                                     | Pronósticos         | 1.491  | 1.491  | 1.491  | 1.491  | 895    | 895    | 895    |
|                                     | Pedidos de clientes | 1.066  | 1.066  | 1.066  | 1.066  | 872    | 872    | 872    |
|                                     | Inventario final    | 509    | 509    | 509    | 509    | 1.105  | 105    | 1.105  |
|                                     | MPS                 | 1000   | 1.000  | 1.000  | 1.000  | 1000   | 0      | 1000   |

| 17      | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| - 3.087 | - 700  | 1.687  | 1.591  | 1.496  | 1.401  | 1.306  | 923    | 541    | 159    |
| 11.613  | 11.613 | 14.095 | 14.095 | 14.095 | 14.095 | 13.172 | 13.172 | 13.172 | 13.172 |
| 11.246  | 11.246 | 13.089 | 13.089 | 13.089 | 13.089 | 14.382 | 14.382 | 14.382 | 14.382 |
| - 700   | 1.687  | 1.591  | 1.496  | 1.401  | 1.306  | 923    | 541    | 159    | - 223  |
| 14.000  | 14000  | 14.000 | 14.000 | 14.000 | 14.000 | 14000  | 14.000 | 14.000 | 14.000 |
| 3.283   | 17.283 | 3.283  | 14.464 | 464    | 14.464 | 464    | 13.913 | 13.913 | 13.913 |
| 10.563  | 10.563 | 13.370 | 13.370 | 13.370 | 13.370 | 13.513 | 13.513 | 13.513 | 13.513 |
| 10.717  | 10.717 | 13.536 | 13.536 | 13.536 | 13.536 | 14.087 | 14.087 | 14.087 | 14.087 |
| 17.283  | 3.283  | 14.464 | 464    | 14.464 | 464    | 13.913 | 13.913 | 13.913 | 13.913 |
| 14000   | 0      | 14000  | 0      | 14000  | 0      | 14000  | 14000  | 14000  | 14000  |
| 2.389   | 16.389 | 2.389  | 13.741 | 13.741 | 13.741 | 13.741 | 13.393 | 13.393 | 13.393 |
| 11.611  | 11.611 | 14.259 | 14.259 | 14.259 | 14.259 | 13.258 | 13.258 | 13.258 | 13.258 |
| 11.407  | 11.407 | 13.258 | 13.258 | 13.258 | 13.258 | 14.607 | 14.607 | 14.607 | 14.607 |
| 16.389  | 2.389  | 13.741 | 13.741 | 13.741 | 13.741 | 13.393 | 13.393 | 13.393 | 13.393 |
| 14.000  | 0      | 14.000 | 14000  | 14.000 | 14000  | 14.000 | 14000  | 14.000 | 14000  |
| 1.052   | 52     | 1.052  | 647    | 647    | 647    | 647    | 518    | 518    | 518    |
| 948     | 948    | 1.185  | 1.185  | 1.185  | 1.185  | 1.342  | 1.342  | 1.342  | 1.342  |
| 948     | 948    | 1.353  | 1.353  | 1.353  | 1.353  | 1.483  | 1.483  | 1.483  | 1.483  |
| 52      | 1.052  | 647    | 647    | 647    | 647    | 518    | 518    | 518    | 518    |
| 0       | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   |
| 1.105   | 105    | 1.105  | 860    | 860    | 860    | 860    | 764    | 764    | 764    |
| 895     | 895    | 1.093  | 1.093  | 1.093  | 1.093  | 1.134  | 1.134  | 1.134  | 1.134  |
| 872     | 872    | 1.140  | 1.140  | 1.140  | 1.140  | 1.236  | 1.236  | 1.236  | 1.236  |
| 105     | 1.105  | 860    | 860    | 860    | 860    | 764    | 764    | 764    | 764    |
| 0       | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   |

| 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34     | 35      | 36      |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| - 223  | 2.092  | 4.407  | 6.722  | 9.037  | 11.352 | 8.002  | 4.653  | 1.304   | - 2.045 |
| 11.426 | 11.426 | 11.426 | 11.426 | 11.426 | 14.580 | 14.580 | 14.580 | 14.580  | 17.122  |
| 11.685 | 11.685 | 11.685 | 11.685 | 11.685 | 17.349 | 17.349 | 17.349 | 17.349  | 19.879  |
| 2.092  | 4.407  | 6.722  | 9.037  | 11.352 | 8.002  | 4.653  | 1.304  | - 2.045 | - 7.924 |
| 14.000 | 14000  | 14.000 | 14000  | 14.000 | 14.000 | 14.000 | 14.000 | 14.000  | 14.000  |
| 13.913 | 970    | 14.970 | 970    | 14.970 | 970    | 11.118 | 11.118 | 11.118  | 11.118  |
| 11.207 | 11.207 | 11.207 | 11.207 | 11.207 | 15.974 | 15.974 | 15.974 | 15.974  | 16.758  |
| 13.030 | 13.030 | 13.030 | 13.030 | 13.030 | 16.883 | 16.883 | 16.883 | 16.883  | 18.040  |
| 970    | 14.970 | 970    | 14.970 | 970    | 11.118 | 11.118 | 11.118 | 11.118  | 9.960   |
| 0      | 14000  | 0      | 14000  | 0      | 14000  | 14000  | 14000  | 14000   | 14000   |
| 13.393 | 2.314  | 16.314 | 2.314  | 16.314 | 2.314  | 11.118 | 11.118 | 11.118  | 11.118  |
| 11.686 | 11.686 | 11.686 | 11.686 | 11.686 | 13.253 | 13.253 | 13.253 | 13.253  | 16.409  |
| 10.602 | 10.602 | 10.602 | 10.602 | 10.602 | 16.883 | 16.883 | 16.883 | 16.883  | 18.040  |
| 2.314  | 16.314 | 2.314  | 16.314 | 2.314  | 11.118 | 11.118 | 11.118 | 11.118  | 9.960   |
| -      | 14000  | -      | 14000  | -      | 14000  | 14.000 | 14000  | 14.000  | 14000   |
| 518    | 804    | 804    | 804    | 804    | 804    | 345    | 345    | 345     | 345     |
| 1.178  | 1.178  | 1.178  | 1.178  | 1.178  | 1.494  | 1.494  | 1.494  | 1.494   | 1.644   |
| 1.196  | 1.196  | 1.196  | 1.196  | 1.196  | 1.655  | 1.655  | 1.655  | 1.655   | 1.873   |
| 804    | 804    | 804    | 804    | 804    | 345    | 345    | 345    | 345     | 127     |
| 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000    | 1000    |
| 764    | 967    | 967    | 967    | 967    | 967    | 319    | 319    | 319     | 319     |
| 979    | 979    | 979    | 979    | 979    | 1.283  | 1.283  | 1.283  | 1.283   | 1.631   |
| 1.033  | 1.033  | 1.033  | 1.033  | 1.033  | 1.681  | 1.681  | 1.681  | 1.681   | 1.832   |
| 967    | 967    | 967    | 967    | 967    | 319    | 319    | 319    | 319     | 168     |
| 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000    | 1000    |

| 37       | 38       | 39       | 40       | 41       | 42       | 43       | 44       | 45       | 46       |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| - 7.924  | - 13.803 | - 19.682 | - 25.560 | - 31.212 | - 36.865 | - 42.517 | - 48.169 | - 53.821 | - 59.573 |
| 17.122   | 17.122   | 17.122   | 19.652   | 19.652   | 19.652   | 19.652   | 19.652   | 19.751   | 19.751   |
| 19.879   | 19.879   | 19.879   | 15.808   | 15.808   | 15.808   | 15.808   | 15.808   | 19.279   | 19.279   |
| - 13.803 | - 19.682 | - 25.560 | - 31.212 | - 36.865 | - 42.517 | - 48.169 | - 53.821 | - 59.573 | - 65.324 |
| 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   |
| 9.960    | 9.960    | 9.960    | 9.960    | 10.137   | 10.137   | 10.137   | 10.137   | 10.137   | 9.333    |
| 16.758   | 16.758   | 16.758   | 17.863   | 17.863   | 17.863   | 17.863   | 17.863   | 18.667   | 18.667   |
| 18.040   | 18.040   | 18.040   | 15.036   | 15.036   | 15.036   | 15.036   | 15.036   | 17.184   | 17.184   |
| 9.960    | 9.960    | 9.960    | 10.137   | 10.137   | 10.137   | 10.137   | 10.137   | 9.333    | 9.333    |
| 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    |
| 9.960    | 9.960    | 9.960    | 9.960    | 10.113   | 10.113   | 10.113   | 10.113   | 10.113   | 9.870    |
| 16.409   | 16.409   | 16.409   | 17.887   | 17.887   | 17.887   | 17.887   | 17.887   | 18.130   | 18.130   |
| 18.040   | 18.040   | 18.040   | 14.504   | 14.504   | 14.504   | 14.504   | 14.504   | 17.789   | 17.789   |
| 9.960    | 9.960    | 9.960    | 10.113   | 10.113   | 10.113   | 10.113   | 10.113   | 9.870    | 9.870    |
| 14.000   | 14000    | 14.000   | 14000    | 14.000   | 14000    | 14.000   | 14000    | 14.000   | 14000    |
| 127      | 127      | 127      | 127      | 142      | 142      | 142      | 142      | 142      | 33       |
| 1.644    | 1.644    | 1.644    | 1.858    | 1.858    | 1.858    | 1.858    | 1.858    | 1.893    | 1.893    |
| 1.873    | 1.873    | 1.873    | 1.516    | 1.516    | 1.516    | 1.516    | 1.516    | 1.967    | 1.967    |
| 127      | 127      | 127      | 142      | 142      | 142      | 142      | 142      | 33       | 33       |
| 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     |
| 168      | 168      | 168      | 168      | 193      | 193      | 193      | 193      | 193      | 148      |
| 1.631    | 1.631    | 1.631    | 1.807    | 1.807    | 1.807    | 1.807    | 1.807    | 1.787    | 1.787    |
| 1.832    | 1.832    | 1.832    | 1.427    | 1.427    | 1.427    | 1.427    | 1.427    | 1.852    | 1.852    |
| 168      | 168      | 168      | 193      | 193      | 193      | 193      | 193      | 148      | 148      |
| 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     |

| 47       | 48       | 49       | 50       | 51       | 52       | 53       | 1        | 2        | 3        |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| - 65.324 | - 71.076 | - 76.827 | - 78.281 | - 79.735 | - 81.189 | - 82.643 | - 84.097 | - 88.336 | - 92.575 |
| 19.751   | 19.751   | 15.454   | 15.454   | 15.454   | 15.454   | 15.454   | 18.239   | 18.239   | 18.239   |
| 19.279   | 19.279   | 14.514   | 14.514   | 14.514   | 14.514   | 14.514   | 17.065   | 17.065   | 17.065   |
| - 71.076 | - 76.827 | - 78.281 | - 79.735 | - 81.189 | - 82.643 | - 84.097 | - 88.336 | - 92.575 | - 96.814 |
| 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   |
| 9.333    | 9.333    | 9.333    | 12.750   | 12.750   | 12.750   | 12.750   | 12.750   | 9.168    | 9.168    |
| 18.667   | 18.667   | 13.910   | 13.910   | 13.910   | 13.910   | 13.910   | 18.832   | 18.832   | 18.832   |
| 17.184   | 17.184   | 15.250   | 15.250   | 15.250   | 15.250   | 15.250   | 15.688   | 15.688   | 15.688   |
| 9.333    | 9.333    | 12.750   | 12.750   | 12.750   | 12.750   | 12.750   | 9.168    | 9.168    | 9.168    |
| 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    |
| 9.870    | 9.870    | 9.870    | 13.490   | 13.490   | 13.490   | 13.490   | 13.490   | 9.862    | 9.862    |
| 18.130   | 18.130   | 14.231   | 14.231   | 14.231   | 14.231   | 14.231   | 18.138   | 18.138   | 18.138   |
| 17.789   | 17.789   | 14.510   | 14.510   | 14.510   | 14.510   | 14.510   | 16.655   | 16.655   | 16.655   |
| 9.870    | 9.870    | 13.490   | 13.490   | 13.490   | 13.490   | 13.490   | 9.862    | 9.862    | 9.862    |
| 14.000   | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    |
| 33       | 33       | 33       | 257      | 257      | 257      | 257      | 257      | - 164    | - 164    |
| 1.893    | 1.893    | 1.570    | 1.570    | 1.570    | 1.570    | 1.570    | 2.164    | 2.164    | 2.164    |
| 1.967    | 1.967    | 1.743    | 1.743    | 1.743    | 1.743    | 1.743    | 1.918    | 1.918    | 1.918    |
| 33       | 33       | 257      | 257      | 257      | 257      | 257      | - 164    | - 164    | - 164    |
| 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     |
| 148      | 148      | 148      | 496      | 496      | 496      | 496      | 496      | 124      | 124      |
| 1.787    | 1.787    | 1.475    | 1.475    | 1.475    | 1.475    | 1.475    | 1.876    | 1.876    | 1.876    |
| 1.852    | 1.852    | 1.504    | 1.504    | 1.504    | 1.504    | 1.504    | 1.593    | 1.593    | 1.593    |
| 148      | 148      | 496      | 496      | 496      | 496      | 496      | 124      | 124      | 124      |
| 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     |

| 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| - 96.814  | - 101.053 | - 104.215 | - 107.376 | - 110.537 | - 113.698 | - 116.518 | - 119.338 | - 122.158 |
| 18.239    | 17.161    | 17.161    | 17.161    | 17.161    | 16.820    | 16.820    | 16.820    | 16.820    |
| 17.065    | 16.790    | 16.790    | 16.790    | 16.790    | 16.574    | 16.574    | 16.574    | 16.574    |
| - 101.053 | - 104.215 | - 107.376 | - 110.537 | - 113.698 | - 116.518 | - 119.338 | - 122.158 | - 124.979 |
| 14.000    | 14.000    | 14.000    | 14.000    | 14.000    | 14.000    | 14.000    | 14.000    | 14.000    |
| 9.168     | 9.168     | 11.393    | 11.393    | 11.393    | 11.393    | 11.460    | 11.460    | 11.460    |
| 18.832    | 16.120    | 16.120    | 16.120    | 16.120    | 16.540    | 16.540    | 16.540    | 16.540    |
| 15.688    | 16.607    | 16.607    | 16.607    | 16.607    | 16.390    | 16.390    | 16.390    | 16.390    |
| 9.168     | 11.393    | 11.393    | 11.393    | 11.393    | 11.460    | 11.460    | 11.460    | 11.460    |
| 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     |
| 9.862     | 9.862     | 11.345    | 11.345    | 11.345    | 11.443    | 11.443    | 11.443    | 11.443    |
| 18.138    | 16.655    | 16.655    | 16.655    | 16.120    | 16.557    | 16.557    | 16.557    | 16.540    |
| 16.655    | 16.557    | 16.557    | 16.557    | 16.557    | 15.700    | 15.700    | 15.700    | 15.700    |
| 9.862     | 11.345    | 11.345    | 11.345    | 11.443    | 11.443    | 11.443    | 11.443    | 11.460    |
| 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     |
| - 164     | - 164     | 26        | 26        | 26        | 26        | 28        | 28        | 28        |
| 2.164     | 1.934     | 1.934     | 1.934     | 1.934     | 1.972     | 1.972     | 1.972     | 1.972     |
| 1.918     | 1.975     | 1.975     | 1.975     | 1.975     | 1.770     | 1.770     | 1.770     | 1.770     |
| - 164     | 26        | 26        | 26        | 26        | 28        | 28        | 28        | 28        |
| 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      |
| 124       | 124       | 372       | 372       | 372       | 372       | 396       | 396       | 396       |
| 1.876     | 1.628     | 1.628     | 1.628     | 1.628     | 1.368     | 1.368     | 1.368     | 1.368     |
| 1.593     | 1.331     | 1.331     | 1.331     | 1.331     | 1.604     | 1.604     | 1.604     | 1.604     |
| 124       | 372       | 372       | 372       | 372       | 396       | 396       | 396       | 396       |
| 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      |

TABLA 13. RESUMEN MPS

| SEMANAS                             |                     | 10     | 11     | 12     | 13     | 14     | 15     | 16     |
|-------------------------------------|---------------------|--------|--------|--------|--------|--------|--------|--------|
| CAJA DE PIZZA PEQUEÑA               | Inventario Inicial  | 14.000 | 2.562  | 5.124  | 7.686  | 10.248 | 7.861  | 5.474  |
|                                     | Pronósticos         | 16.562 | 16.562 | 16.562 | 16.562 | 11.613 | 11.613 | 11.613 |
|                                     | Pedidos de clientes | 14.333 | 14.333 | 14.333 | 14.333 | 11.246 | 11.246 | 11.246 |
|                                     | Inventario final    | 2.562  | 5.124  | 7.686  | 10.248 | 7.861  | 5.474  | 3.087  |
|                                     | MPS                 | 0      | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 |
| CAJA DE PIZZA GRANDE                | Inventario Inicial  | 14.000 | 11.946 | 11.946 | 11.946 | 11.946 | 3.283  | 17.283 |
|                                     | Pronósticos         | 16.054 | 16.054 | 16.054 | 16.054 | 10.563 | 10.563 | 10.563 |
|                                     | Pedidos de clientes | 12.749 | 12.749 | 12.749 | 12.749 | 10.717 | 10.717 | 10.717 |
|                                     | Inventario final    | 11.946 | 11.946 | 11.946 | 11.946 | 3.283  | 17.283 | 3.283  |
|                                     | MPS                 | 14.000 | 14.000 | 14.000 | 14.000 | 0      | 14.000 | 0      |
| CAJA DE PIZZA MEDIANA               | Inventario Inicial  | 14.000 | 12.065 | 12.065 | 12.065 | 12.065 | 2.389  | 16.389 |
|                                     | Pronósticos         | 15.935 | 15.935 | 15.935 | 15.935 | 11.611 | 11.611 | 11.611 |
|                                     | Pedidos de clientes | 14.513 | 14.513 | 14.513 | 14.513 | 11.407 | 11.407 | 11.407 |
|                                     | Inventario final    | 12.065 | 12.065 | 12.065 | 12.065 | 2.389  | 16.389 | 2.389  |
|                                     | MPS                 | 14.000 | 14.000 | 14.000 | 14.000 | 0      | 14.000 | 0      |
| CAJA DE ARCHIVO CON TAPA            | Inventario Inicial  | 1.000  | 316    | 316    | 316    | 316    | 1.052  | 52     |
|                                     | Pronósticos         | 1.684  | 1.684  | 1.684  | 1.684  | 948    | 948    | 948    |
|                                     | Pedidos de clientes | 1.149  | 1.149  | 1.149  | 1.149  | 948    | 948    | 948    |
|                                     | Inventario final    | 316    | 316    | 316    | 316    | 1.052  | 52     | 1.052  |
|                                     | MPS                 | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 0      | 1.000  |
| CAJA DE ARCHIVO SIN TAPA O ESTÁNDAR | Inventario Inicial  | 1.000  | 509    | 509    | 509    | 509    | 1.105  | 105    |
|                                     | Pronósticos         | 1.491  | 1.491  | 1.491  | 1.491  | 895    | 895    | 895    |
|                                     | Pedidos de clientes | 1.066  | 1.066  | 1.066  | 1.066  | 872    | 872    | 872    |
|                                     | Inventario final    | 509    | 509    | 509    | 509    | 1.105  | 105    | 1.105  |
|                                     | MPS                 | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 0      | 1.000  |

| 17      | 18     | 19     | 20     | 21     | 22     | 23     | 24     | 25     | 26     |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| - 3.087 | - 700  | 1.687  | 1.591  | 1.496  | 1.401  | 1.306  | 923    | 541    | 159    |
| 11.613  | 11.613 | 14.095 | 14.095 | 14.095 | 14.095 | 13.172 | 13.172 | 13.172 | 13.172 |
| 11.246  | 11.246 | 13.089 | 13.089 | 13.089 | 13.089 | 14.382 | 14.382 | 14.382 | 14.382 |
| - 700   | 1.687  | 1.591  | 1.496  | 1.401  | 1.306  | 923    | 541    | 159    | - 223  |
| 14.000  | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 |
| 3.283   | 17.283 | 3.283  | 14.464 | 464    | 14.464 | 464    | 13.913 | 13.913 | 13.913 |
| 10.563  | 10.563 | 13.370 | 13.370 | 13.370 | 13.370 | 13.513 | 13.513 | 13.513 | 13.513 |
| 10.717  | 10.717 | 13.536 | 13.536 | 13.536 | 13.536 | 14.087 | 14.087 | 14.087 | 14.087 |
| 17.283  | 3.283  | 14.464 | 464    | 14.464 | 464    | 13.913 | 13.913 | 13.913 | 13.913 |
| 14.000  | 0      | 14.000 | 0      | 14.000 | 0      | 14.000 | 14.000 | 14.000 | 14.000 |
| 2.389   | 16.389 | 2.389  | 13.741 | 13.741 | 13.741 | 13.741 | 13.393 | 13.393 | 13.393 |
| 11.611  | 11.611 | 14.259 | 14.259 | 14.259 | 14.259 | 14.259 | 13.258 | 13.258 | 13.258 |
| 11.407  | 11.407 | 13.258 | 13.258 | 13.258 | 13.258 | 14.607 | 14.607 | 14.607 | 14.607 |
| 16.389  | 2.389  | 13.741 | 13.741 | 13.741 | 13.741 | 13.393 | 13.393 | 13.393 | 13.393 |
| 14.000  | 0      | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 |
| 1.052   | 52     | 1.052  | 647    | 647    | 647    | 647    | 518    | 518    | 518    |
| 948     | 948    | 1.185  | 1.185  | 1.185  | 1.185  | 1.342  | 1.342  | 1.342  | 1.342  |
| 948     | 948    | 1.353  | 1.353  | 1.353  | 1.353  | 1.483  | 1.483  | 1.483  | 1.483  |
| 52      | 1.052  | 647    | 647    | 647    | 647    | 518    | 518    | 518    | 518    |
| 0       | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  |
| 1.105   | 105    | 1.105  | 860    | 860    | 860    | 860    | 764    | 764    | 764    |
| 895     | 895    | 1.093  | 1.093  | 1.093  | 1.093  | 1.134  | 1.134  | 1.134  | 1.134  |
| 872     | 872    | 1.140  | 1.140  | 1.140  | 1.140  | 1.236  | 1.236  | 1.236  | 1.236  |
| 105     | 1.105  | 860    | 860    | 860    | 860    | 764    | 764    | 764    | 764    |
| 0       | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  | 1.000  |

| 27     | 28     | 29     | 30     | 31     | 32     | 33     | 34     | 35      | 36      |
|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| - 223  | 2.092  | 4.407  | 6.722  | 9.037  | 11.352 | 8.002  | 4.653  | 1.304   | - 2.045 |
| 11.426 | 11.426 | 11.426 | 11.426 | 11.426 | 14.580 | 14.580 | 14.580 | 14.580  | 17.122  |
| 11.685 | 11.685 | 11.685 | 11.685 | 11.685 | 17.349 | 17.349 | 17.349 | 17.349  | 19.879  |
| 2.092  | 4.407  | 6.722  | 9.037  | 11.352 | 8.002  | 4.653  | 1.304  | - 2.045 | - 7.924 |
| 14.000 | 14000  | 14.000 | 14000  | 14.000 | 14.000 | 14.000 | 14.000 | 14.000  | 14.000  |
| 13.913 | 970    | 14.970 | 970    | 14.970 | 970    | 11.118 | 11.118 | 11.118  | 11.118  |
| 11.207 | 11.207 | 11.207 | 11.207 | 11.207 | 15.974 | 15.974 | 15.974 | 15.974  | 16.758  |
| 13.030 | 13.030 | 13.030 | 13.030 | 13.030 | 16.883 | 16.883 | 16.883 | 16.883  | 18.040  |
| 970    | 14.970 | 970    | 14.970 | 970    | 11.118 | 11.118 | 11.118 | 11.118  | 9.960   |
| 0      | 14000  | 0      | 14000  | 0      | 14000  | 14000  | 14000  | 14000   | 14000   |
| 13.393 | 2.314  | 16.314 | 2.314  | 16.314 | 2.314  | 11.118 | 11.118 | 11.118  | 11.118  |
| 11.686 | 11.686 | 11.686 | 11.686 | 11.686 | 13.253 | 13.253 | 13.253 | 13.253  | 16.409  |
| 10.602 | 10.602 | 10.602 | 10.602 | 10.602 | 16.883 | 16.883 | 16.883 | 16.883  | 18.040  |
| 2.314  | 16.314 | 2.314  | 16.314 | 2.314  | 11.118 | 11.118 | 11.118 | 11.118  | 9.960   |
| -      | 14000  | -      | 14000  | -      | 14000  | 14.000 | 14000  | 14.000  | 14000   |
| 518    | 804    | 804    | 804    | 804    | 804    | 345    | 345    | 345     | 345     |
| 1.178  | 1.178  | 1.178  | 1.178  | 1.178  | 1.494  | 1.494  | 1.494  | 1.494   | 1.644   |
| 1.196  | 1.196  | 1.196  | 1.196  | 1.196  | 1.655  | 1.655  | 1.655  | 1.655   | 1.873   |
| 804    | 804    | 804    | 804    | 804    | 345    | 345    | 345    | 345     | 127     |
| 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000    | 1000    |
| 764    | 967    | 967    | 967    | 967    | 967    | 319    | 319    | 319     | 319     |
| 979    | 979    | 979    | 979    | 979    | 1.283  | 1.283  | 1.283  | 1.283   | 1.631   |
| 1.033  | 1.033  | 1.033  | 1.033  | 1.033  | 1.681  | 1.681  | 1.681  | 1.681   | 1.832   |
| 967    | 967    | 967    | 967    | 967    | 319    | 319    | 319    | 319     | 168     |
| 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000   | 1000    | 1000    |

| 38       | 39       | 40       | 41       | 42       | 43       | 44       | 45       | 46       |          |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| - 13.803 | - 19.682 | - 25.560 | - 31.212 | - 36.865 | - 42.517 | - 48.169 | - 53.821 | - 59.573 |          |
| 17.122   | 17.122   | 19.652   | 19.652   | 19.652   | 19.652   | 19.652   | 19.751   | 19.751   |          |
| 19.879   | 19.879   | 15.808   | 15.808   | 15.808   | 15.808   | 15.808   | 19.279   | 19.279   |          |
| - 19.682 | - 25.560 | - 31.212 | - 36.865 | - 42.517 | - 48.169 | - 53.821 | - 59.573 | - 65.324 |          |
| 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   |          |
| 9.960    | 9.960    | 9.960    | 10.137   | 10.137   | 10.137   | 10.137   | 10.137   | 9.333    |          |
| 16.758   | 16.758   | 17.863   | 17.863   | 17.863   | 17.863   | 17.863   | 18.667   | 18.667   |          |
| 18.040   | 18.040   | 15.036   | 15.036   | 15.036   | 15.036   | 15.036   | 17.184   | 17.184   |          |
| 9.960    | 9.960    | 10.137   | 10.137   | 10.137   | 10.137   | 10.137   | 9.333    | 9.333    |          |
| 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    |          |
| 9.960    | 9.960    | 9.960    | 10.113   | 10.113   | 10.113   | 10.113   | 10.113   | 9.870    |          |
| 16.409   | 16.409   | 17.887   | 17.887   | 17.887   | 17.887   | 17.887   | 18.130   | 18.130   |          |
| 18.040   | 18.040   | 14.504   | 14.504   | 14.504   | 14.504   | 14.504   | 17.789   | 17.789   |          |
| 9.960    | 9.960    | 10.113   | 10.113   | 10.113   | 10.113   | 10.113   | 9.870    | 9.870    |          |
| 14000    | 14.000   | 14000    | 14.000   | 14000    | 14.000   | 14000    | 14.000   | 14000    |          |
| 127      | 127      | 127      | 142      | 142      | 142      | 142      | 142      | 33       |          |
| 1.644    | 1.644    | 1.858    | 1.858    | 1.858    | 1.858    | 1.858    | 1.893    | 1.893    |          |
| 1.873    | 1.873    | 1.516    | 1.516    | 1.516    | 1.516    | 1.516    | 1.967    | 1.967    |          |
| 127      | 127      | 142      | 142      | 142      | 142      | 142      | 33       | 33       |          |
| 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     |          |
| 168      | 168      | 168      | 193      | 193      | 193      | 193      | 193      | 148      |          |
| 1.631    | 1.631    | 1.807    | 1.807    | 1.807    | 1.807    | 1.807    | 1.787    | 1.787    |          |
| 1.832    | 1.832    | 1.427    | 1.427    | 1.427    | 1.427    | 1.427    | 1.852    | 1.852    |          |
| 168      | 168      | 193      | 193      | 193      | 193      | 193      | 148      | 148      |          |
| 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     |          |
| 47       | 48       | 49       | 50       | 51       | 52       | 53       | 1        | 2        | 3        |
| - 65.324 | - 71.076 | - 76.827 | - 78.281 | - 79.735 | - 81.189 | - 82.643 | - 84.097 | - 88.336 | - 92.575 |
| 19.751   | 19.751   | 15.454   | 15.454   | 15.454   | 15.454   | 15.454   | 18.239   | 18.239   | 18.239   |
| 19.279   | 19.279   | 14.514   | 14.514   | 14.514   | 14.514   | 14.514   | 17.065   | 17.065   | 17.065   |
| - 71.076 | - 76.827 | - 78.281 | - 79.735 | - 81.189 | - 82.643 | - 84.097 | - 88.336 | - 92.575 | - 96.814 |
| 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   | 14.000   |
| 9.333    | 9.333    | 9.333    | 12.750   | 12.750   | 12.750   | 12.750   | 12.750   | 9.168    | 9.168    |
| 18.667   | 18.667   | 13.910   | 13.910   | 13.910   | 13.910   | 13.910   | 18.832   | 18.832   | 18.832   |
| 17.184   | 17.184   | 15.250   | 15.250   | 15.250   | 15.250   | 15.250   | 15.688   | 15.688   | 15.688   |
| 9.333    | 9.333    | 12.750   | 12.750   | 12.750   | 12.750   | 12.750   | 9.168    | 9.168    | 9.168    |
| 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    |
| 9.870    | 9.870    | 9.870    | 13.490   | 13.490   | 13.490   | 13.490   | 13.490   | 9.862    | 9.862    |
| 18.130   | 18.130   | 14.231   | 14.231   | 14.231   | 14.231   | 14.231   | 18.138   | 18.138   | 18.138   |
| 17.789   | 17.789   | 14.510   | 14.510   | 14.510   | 14.510   | 14.510   | 16.655   | 16.655   | 16.655   |
| 9.870    | 9.870    | 13.490   | 13.490   | 13.490   | 13.490   | 13.490   | 9.862    | 9.862    | 9.862    |
| 14.000   | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    | 14000    |
| 33       | 33       | 33       | 257      | 257      | 257      | 257      | 257      | 164      | 164      |
| 1.893    | 1.893    | 1.570    | 1.570    | 1.570    | 1.570    | 1.570    | 2.164    | 2.164    | 2.164    |
| 1.967    | 1.967    | 1.743    | 1.743    | 1.743    | 1.743    | 1.743    | 1.918    | 1.918    | 1.918    |
| 33       | 33       | 257      | 257      | 257      | 257      | 257      | 164      | 164      | 164      |
| 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     |
| 148      | 148      | 148      | 496      | 496      | 496      | 496      | 496      | 124      | 124      |
| 1.787    | 1.787    | 1.475    | 1.475    | 1.475    | 1.475    | 1.475    | 1.876    | 1.876    | 1.876    |
| 1.852    | 1.852    | 1.504    | 1.504    | 1.504    | 1.504    | 1.504    | 1.593    | 1.593    | 1.593    |
| 148      | 148      | 496      | 496      | 496      | 496      | 496      | 124      | 124      | 124      |
| 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     | 1000     |

| 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| - 96.814  | - 101.053 | - 104.215 | - 107.376 | - 110.537 | - 113.698 | - 116.518 | - 119.338 | - 122.158 |
| 18.239    | 17.161    | 17.161    | 17.161    | 17.161    | 16.820    | 16.820    | 16.820    | 16.820    |
| 17.065    | 16.790    | 16.790    | 16.790    | 16.790    | 16.574    | 16.574    | 16.574    | 16.574    |
| - 101.053 | - 104.215 | - 107.376 | - 110.537 | - 113.698 | - 116.518 | - 119.338 | - 122.158 | - 124.979 |
| 14.000    | 14.000    | 14.000    | 14.000    | 14.000    | 14.000    | 14.000    | 14.000    | 14.000    |
| 9.168     | 9.168     | 11.393    | 11.393    | 11.393    | 11.393    | 11.460    | 11.460    | 11.460    |
| 18.832    | 16.120    | 16.120    | 16.120    | 16.120    | 16.540    | 16.540    | 16.540    | 16.540    |
| 15.688    | 16.607    | 16.607    | 16.607    | 16.607    | 16.390    | 16.390    | 16.390    | 16.390    |
| 9.168     | 11.393    | 11.393    | 11.393    | 11.393    | 11.460    | 11.460    | 11.460    | 11.460    |
| 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     |
| 9.862     | 9.862     | 11.345    | 11.345    | 11.345    | 11.443    | 11.443    | 11.443    | 11.443    |
| 18.138    | 16.655    | 16.655    | 16.655    | 16.120    | 16.557    | 16.557    | 16.557    | 16.540    |
| 16.655    | 16.557    | 16.557    | 16.557    | 16.557    | 15.700    | 15.700    | 15.700    | 15.700    |
| 9.862     | 11.345    | 11.345    | 11.345    | 11.443    | 11.443    | 11.443    | 11.443    | 11.460    |
| 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     | 14000     |
| - 164     | - 164     | 26        | 26        | 26        | 26        | 28        | 28        | 28        |
| 2.164     | 1.934     | 1.934     | 1.934     | 1.934     | 1.972     | 1.972     | 1.972     | 1.972     |
| 1.918     | 1.975     | 1.975     | 1.975     | 1.975     | 1.770     | 1.770     | 1.770     | 1.770     |
| - 164     | 26        | 26        | 26        | 26        | 28        | 28        | 28        | 28        |
| 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      |
| 124       | 124       | 372       | 372       | 372       | 372       | 396       | 396       | 396       |
| 1.876     | 1.628     | 1.628     | 1.628     | 1.628     | 1.368     | 1.368     | 1.368     | 1.368     |
| 1.593     | 1.331     | 1.331     | 1.331     | 1.331     | 1.604     | 1.604     | 1.604     | 1.604     |
| 124       | 372       | 372       | 372       | 372       | 396       | 396       | 396       | 396       |
| 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      | 1000      |

TABLA 14. COMPROBACIÓN MPS

| SEMANAS                             | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| CAJA DE PIZAPEQUEÑA                 | 0     | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| CAJA DE PIZZA GRANDE                | 14000 | 14000 | 14000 | 14000 | 0     | 14000 | 0     |
| CAJA DE PIZZAMEDIANA                | 14000 | 14000 | 14000 | 14000 | 0     | 14000 | 0     |
| CAJA DE ARCHIVO CON TAPA            | 1000  | 1000  | 0     | 0     | 0     | 0     | 0     |
| CAJA DE ARCHIVO SIN TAPA O ESTÁNDAR | 1000  | 1000  | 0     | 0     | 0     | 0     | 0     |

| 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    | 25    | 26    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 0     | 14000 | 0     | 14000 | 0     | 14000 | 14000 | 14000 | 14000 |
| 14000 | 0     | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 27    | 28    | 29    | 30    | 31    | 32    | 33    | 34    | 35    | 36    |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 14000 | 0     | 14000 | 0     | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 14000 | 0     | 14000 | 0     | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 37    | 38    | 39    | 40    | 41    | 42    | 43    | 44    | 45    | 46    |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

| 47    | 48    | 49    | 50    | 51    | 52    | 53    | 1     | 2     | 3     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  |
| 0     | 0     | 0     | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  |

| 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | ESTÁNDAR (MIN) | TOTAL     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|-----------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0,046          | 770.000   |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0,046          | 672.000   |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0,046          | 700.000   |
| 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 0,048          | 18.000    |
| 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 1000  | 0,046          | 18.000    |
|       |       |       |       |       |       |       |       |       |                | 2.178.000 |

TABLA 15. COMPROBACIÓN

| CAPACIDAD INSTALADA |  |  | 10  | 11   | 12   | 13   | 14   | 15   | 16   |
|---------------------|--|--|-----|------|------|------|------|------|------|
| CAPACIDAD INSTALADA |  |  | 336 | 336  | 336  | 336  | 336  | 336  | 336  |
| CAPACIDAD REQUERIDA |  |  | 0   | 1288 | 1288 | 1288 | 644  | 1288 | 644  |
| DEFICIT             |  |  | 336 | -952 | -952 | -952 | -308 | -952 | -308 |

| 17   | 18   | 19   | 20   | 21   | 22   | 23   | 24   | 25   | 26   |
|------|------|------|------|------|------|------|------|------|------|
| 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  |
| 1288 | 644  | 1288 | 644  | 1288 | 644  | 1288 | 1288 | 1288 | 1288 |
| -952 | -308 | -952 | -308 | -952 | -308 | -952 | -952 | -952 | -952 |

| 27   | 28   | 29   | 30   | 31   | 32   | 33   | 34   | 35   | 36   |
|------|------|------|------|------|------|------|------|------|------|
| 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  |
| 644  | 1288 | 644  | 1288 | 644  | 1288 | 1288 | 1288 | 1288 | 1288 |
| -308 | -952 | -308 | -952 | -308 | -952 | -952 | -952 | -952 | -952 |

| 37   | 38   | 39   | 40   | 41   | 42   | 43   | 44   | 45   | 46   |
|------|------|------|------|------|------|------|------|------|------|
| 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  |
| 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 |
| -952 | -952 | -952 | -952 | -952 | -952 | -952 | -952 | -952 | -952 |

| 47   | 48   | 49   | 50   | 51   | 52   | 1    | 2    | 3    |
|------|------|------|------|------|------|------|------|------|
| 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  |
| 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 |
| -952 | -952 | -952 | -952 | -952 | -952 | -952 | -952 | -952 |

| 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   |
|------|------|------|------|------|------|------|------|------|------|
| 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  | 336  |
| 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 | 1288 |
| -952 | -952 | -952 | -952 | -952 | -952 | -952 | -952 | -952 | -952 |

|              |  |
|--------------|--|
| Trabajadores |  |
| Horas/días   |  |
| Días semana  |  |
| Horas semana |  |

|     |
|-----|
| 7   |
| 8   |
| 6   |
| 336 |

|    |     |
|----|-----|
| 1  | 8   |
| 30 | 240 |



TABLA 16. TABLA DE DATOS MRP CAJA DE PIZZA PEQUEÑA

| REGISTRO DE INVENTARIOS CAJAS PARA PIZZA PEQUEÑA |                               |       |                       |                    |                 |  |                     |                         |          |                  |
|--|-------------------------------|-------|-----------------------|--------------------|-----------------|--|---------------------|-------------------------|----------|------------------|
| CÓDIGO   | DESCRIPCIÓN                   | NIVEL | INVENTARIO DISPONIBLE | STOCK DE SEGURIDAD | ELEMENTO PADRE  | CANTIDAD PARA ELABORAR EL ELEMENTO PADRE | LEAD TIME (SEMANAS) | RECEPCIONES PROGRAMADAS |          |                  |
|  |                               |       |                       |                    |                 |  |                     | SEMANA                  | CANTIDAD | UNIDAD DE MEDIDA |
| A  | CAJAS DE CARTÓN               | 0     | 14.000                | 0                  |                 | 14.000                                   | 1                   | 0                       | 0        | Caja             |
| B  | LÁMINAS DE CARTÓN (m)         | 1     | 2.000                 | 923                | CAJAS DE CARTÓN | 1.077                                    | 1                   | 13                      | 1.077    | Lámina           |
| C  | TINTA (ml)                    | 1     | 0,066                 | 0                  | CAJAS DE CARTÓN | 0,066                                    | 4                   | 16                      | 3        | Galón            |
| D  | PEGANTE (ml)                  | 1     | 0,044                 | 0                  | CAJAS DE CARTÓN | 0,044                                    | 2                   | 14                      | 1        | Galón            |
| E  | CINTA ABRAZADERA (rollo en m) | 1     | 1,4                   | 0                  | CAJAS DE CARTÓN | 1,4                                      | 1                   | 13                      | 1        | Rollo            |

TABLA 17. MRP CAJA DE PIZZA PEQUEÑA

| SEMANAS          |   | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
|------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|
| CAJAS            | NECESIDADES BRUTAS                              | 0     | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
|                  | REC.PROGRAMADO                                  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                  | DISPONIBLE                                      | 14000 | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                  | NECESIDADES NETAS                               | 0     | 14000 | 28000 | 14001 | 14000 | 14000 | 14000 | 14000 |
|                  | RECEPCIÓN DE ORDEN                              | 0     | 14000 | 28000 | 14001 | 14000 | 14000 | 14000 | 14000 |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 14000 | 28000 | 14001 | 14000 | 14000 | 14000 | 14000 | 14000 |
| LÁMINA DE CARTÓN | NECESIDADES BRUTAS                              | 14000 | 28000 | 14001 | 14000 | 14000 | 14000 | 14000 | 14000 |
|                  | REC.PROGRAMADO                                  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
|                  | DISPONIBLE                                      | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
|                  | NECESIDADES NETAS                               | 12923 | 26923 | 12924 | 12923 | 12923 | 12923 | 12923 | 12923 |
|                  | RECEPCIÓN DE ORDEN                              | 12923 | 26923 | 12924 | 12923 | 12923 | 12923 | 12923 | 12923 |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 26923 | 12924 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| TINTA            | NECESIDADES BRUTAS                              | 925   | 1849  | 925   | 925   | 925   | 925   | 925   | 925   |
|                  | REC.PROGRAMADO                                  | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     |
|                  | DISPONIBLE                                      | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                  | NECESIDADES NETAS                               | 925   | 1849  | 925   | 922   | 925   | 925   | 925   | 922   |
|                  | RECEPCIÓN DE ORDEN                              | 925   | 1849  | 925   | 922   | 925   | 925   | 925   | 922   |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 1849  | 925   | 922   | 925   | 925   | 925   | 922   | 925   |
| PEGANTE          | NECESIDADES BRUTAS                              | 616   | 1233  | 617   | 616   | 616   | 616   | 616   | 616   |
|                  | REC.PROGRAMADO                                  | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     |
|                  | DISPONIBLE                                      | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                  | NECESIDADES NETAS                               | 616   | 1232  | 617   | 615   | 616   | 615   | 616   | 615   |
|                  | RECEPCIÓN DE ORDEN                              | 616   | 1232  | 617   | 615   | 616   | 615   | 616   | 615   |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 1232  | 617   | 615   | 616   | 615   | 616   | 615   | 616   |
| CINTA            | NECESIDADES BRUTAS                              | 19600 | 39200 | 19601 | 19600 | 19600 | 19600 | 19600 | 19600 |
|                  | REC.PROGRAMADO                                  | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
|                  | DISPONIBLE                                      | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                  | NECESIDADES NETAS                               | 19598 | 39199 | 19600 | 19599 | 19599 | 19599 | 19599 | 19599 |
|                  | RECEPCIÓN DE ORDEN                              | 19598 | 39199 | 19600 | 19599 | 19599 | 19599 | 19599 | 19599 |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 39199 | 19600 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |

| 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
| 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   |
| 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   |
| 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   |
| 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |

| 33    | 34    | 35    | 36    | 37    | 38    | 39    | 40    | 41    | 42    | 43    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
| 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   |
| 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   |
| 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   |
| 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |

| 44    | 45    | 46    | 47    | 48    | 49    | 50    | 51    | 52    | 1     | 2     | 3     |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
| 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 0     | 0     | 0     | 0     |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 0     | 0     | 0     | 0     |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   |
| 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 925   | 922   | 925   | 925   |
| 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 925   | 922   | 925   | 925   |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   |
| 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |

| 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0     |
| 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
| 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 0     |
| 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     |
| 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     | 0     |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 0     |
| 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     | 0     |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 0     |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     | 0     |

| 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
| 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   |
| 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   |
| 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   |
| 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |

| 31    | 32    | 33    | 34    | 35    | 36    | 37    | 38    | 39    | 40    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
| 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   |
| 0     | 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   |
| 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   |
| 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   |
| 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |

| 41    | 42    | 43    | 44    | 45    | 46    | 47    | 48    | 49    | 50    | 51    | 52    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
| 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 0     |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 0     |
| 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 12923 | 0     | 0     |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   |
| 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   |
| 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 925   | 922   |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   |
| 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 |



| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0     |
| 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  | 1077  |
| 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   | 923   |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 0     |
| 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     |
| 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     | 0     |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 0     |
| 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     | 0     |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 0     |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     | 0     |

**TABLA 18. TABLA DE DATOS MRP CAJA DE PIZZA GRANDE**

| CÓDIGO | DESCRIPCIÓN                   | NIVEL | INVENTARIO DISPONIBLE | STOCK DE SEGURIDAD | ELEMENTO PADRE  | REGISTRO DE INVENTARIOS CAJAS PARA PIZZA GRANDE |                     | RECEPCIONES PROGRAMADAS |          |                  |
|--------|-------------------------------|-------|-----------------------|--------------------|-----------------|---|---------------------|-------------------------|----------|------------------|
|        |                               |       |                       |                    |                 | CANTIDAD CAJA ELABORAR EL ELEMENTO PADRE        | LEAD TIME (SEMANAS) | SEMANA                  | CANTIDAD | UNIDAD DE MEDIDA |
|        |                               |       |                       |                    |                 |   |                     |                         |          |                  |
| A      | CAJAS DE CARTÓN               | 0     | 14.000                | 0                  |                 | 14.000  | 1                   | 0                       | 0        | Caja             |
| B      | LÁMINAS DE CARTÓN (m)         | 1     | 5.000                 | 333                | CAJAS DE CARTÓN | 4.667   | 1                   | 13                      | 4.667    | Lámina           |
| C      | TINTA (ml)                    | 1     | 0,066                 | 0                  | CAJAS DE CARTÓN | 0,066   | 4                   | 16                      | 3        | Galón            |
| D      | PEGANTE (ml)                  | 1     | 0,044                 | 0                  | CAJAS DE CARTÓN | 0,044   | 2                   | 14                      | 1        | Galón            |
| E      | CINTA ABRAZADERA (rollo en m) | 1     | 1,4                   | 0                  | CAJAS DE CARTÓN | 1,4   | 1                   | 13                      | 1        | Rollo            |

**TABLA 19. MRP CAJA DE PIZZA GRANDE**

| SEMANAS          |   | 13    | 14    | 15     | 16     | 17     | 18     | 19     | 20     |
|------------------|---|-------|-------|--------|--------|--------|--------|--------|--------|
| CAJAS            | NECESIDADES BRUTAS                              | 14000 | 14000 | 14000  | 14000  | 0      | 14000  | 0      | 14000  |
|                  | REC.PROGRAMADO                                  | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
|                  | DISPONIBLE                                      | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
|                  | NECESIDADES NETAS                               | 0     | 14000 | 14000  | 14000  | 0      | 14000  | 0      | 14000  |
|                  | RECEPCIÓN DE ORDEN                              | 0     | 14000 | 14000  | 14000  | 0      | 14000  | 0      | 14000  |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 14000 | 14000 | 14000  | 0      | 14000  | 0      | 14000  | 0      |
| LÁMINA DE CARTÓN | NECESIDADES BRUTAS                              | 14000 | 14000 | 14.000 | 0      | 14.000 | 0      | 14.000 | 0      |
|                  | REC.PROGRAMADO                                  | 4667  | 1077  | 1077   | 1077   | 1077   | 1077   | 1077   | 1077   |
|                  | DISPONIBLE                                      | 4667  | -8256 | -21179 | -20103 | -33026 | -31949 | -44872 | -43795 |
|                  | NECESIDADES NETAS                               | 8256  | 8590  | 21513  | 20436  | 33359  | 32282  | 45205  | 44128  |
|                  | RECEPCIÓN DE ORDEN                              | 8256  | 8590  | 21513  | 20436  | 33359  | 32282  | 45205  | 44128  |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 8590  | 21513 | 20436  | 33359  | 32282  | 45205  | 44128  | 57051  |
| TINTA            | NECESIDADES BRUTAS                              | 925   | 925   | 925    | 0      | 925    | 0      | 925    | 0      |
|                  | REC.PROGRAMADO                                  | 0     | 0     | 0      | 3      | 0      | 0      | 0      | 3      |
|                  | DISPONIBLE                                      | 925   | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
|                  | NECESIDADES NETAS                               | 925   | 0     | 925    | -3     | 925    | 0      | 925    | -3     |
|                  | RECEPCIÓN DE ORDEN                              | 925   | 0     | 925    | -3     | 925    | 0      | 925    | -3     |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 0     | 925   | -3     | 925    | 0      | 925    | -3     | 925    |
| PEGANTE          | NECESIDADES BRUTAS                              | 616   | 616   | 616    | 0      | 616    | 0      | 616    | 0      |
|                  | REC.PROGRAMADO                                  | 0     | 1     | 0      | 1      | 0      | 1      | 0      | 1      |
|                  | DISPONIBLE                                      | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
|                  | NECESIDADES NETAS                               | 616   | 615   | 616    | -1     | 616    | -1     | 616    | -1     |
|                  | RECEPCIÓN DE ORDEN                              | 616   | 615   | 616    | -1     | 616    | -1     | 616    | -1     |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 615   | 616   | -1     | 616    | -1     | 616    | -1     | 616    |
| CINTA            | NECESIDADES BRUTAS                              | 19600 | 19600 | 19600  | 0      | 19600  | 0      | 19600  | 0      |
|                  | REC.PROGRAMADO                                  | 1     | 1     | 1      | 1      | 1      | 1      | 1      | 1      |
|                  | DISPONIBLE                                      | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
|                  | NECESIDADES NETAS                               | 0     | 19599 | 19599  | -1     | 19599  | -1     | 19599  | -1     |
|                  | RECEPCIÓN DE ORDEN                              | 0     | 19599 | 19599  | -1     | 19599  | -1     | 19599  | -1     |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 19599 | 19599 | -1     | 19599  | -1     | 19599  | -1     | 19599  |

| 21     | 22     | 23     | 24     | 25     | 26     | 27      | 28      | 29      | 30      |
|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 0      | 14000  | 0      | 14000  | 0      | 14000  | 14000   | 14000   | 14000   | 0       |
| 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       |
| 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       |
| 0      | 14000  | 0      | 14000  | 0      | 14000  | 14000   | 14000   | 14000   | 0       |
| 0      | 14000  | 0      | 14000  | 0      | 14000  | 14000   | 14000   | 14000   | 0       |
| 14000  | 0      | 14000  | 0      | 14000  | 14000  | 14000   | 14000   | 0       | 14000   |
| 14.000 | 0      | 14.000 | 0      | 14.000 | 14000  | 14.000  | 14000   | -       | 14000   |
| 1077   | 1077   | 1077   | 1077   | 1077   | 1077   | 1077    | 1077    | 1077    | 1077    |
| -56718 | -55641 | -68564 | -67487 | -80410 | -93333 | -106256 | -119179 | -118103 | -131026 |
| 57051  | 55974  | 68897  | 67821  | 80744  | 93667  | 106590  | 119513  | 118436  | 131359  |
| 57051  | 55974  | 68897  | 67821  | 80744  | 93667  | 106590  | 119513  | 118436  | 131359  |
| 55974  | 68897  | 67821  | 80744  | 93667  | 106590 | 119513  | 118436  | 131359  | 130282  |
| 925    | 0      | 925    | 0      | 925    | 925    | 925     | 925     | 0       | 925     |
| 0      | 0      | 0      | 3      | 0      | 0      | 0       | 3       | 0       | 0       |
| 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       |
| 925    | 0      | 925    | -3     | 925    | 925    | 925     | 922     | 0       | 925     |
| 925    | 0      | 925    | -3     | 925    | 925    | 925     | 922     | 0       | 925     |
| 0      | 925    | -3     | 925    | 925    | 925    | 922     | 0       | 925     | 0       |
| 616    | 0      | 616    | 0      | 616    | 616    | 616     | 616     | 0       | 616     |
| 0      | 1      | 0      | 1      | 0      | 1      | 0       | 1       | 0       | 1       |
| 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       |
| 616    | -1     | 616    | -1     | 616    | 615    | 616     | 615     | 0       | 615     |
| 616    | -1     | 616    | -1     | 616    | 615    | 616     | 615     | 0       | 615     |
| -1     | 616    | -1     | 616    | 615    | 616    | 615     | 0       | 615     | 0       |
| 19600  | 0      | 19600  | 0      | 19600  | 19600  | 19600   | 19600   | 0       | 19600   |
| 1      | 1      | 1      | 1      | 1      | 1      | 1       | 1       | 1       | 1       |
| 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       |
| 19599  | -1     | 19599  | -1     | 19599  | 19599  | 19599   | 19599   | -1      | 19599   |
| 19599  | -1     | 19599  | -1     | 19599  | 19599  | 19599   | 19599   | -1      | 19599   |
| -1     | 19599  | -1     | 19599  | 19599  | 19599  | 19599   | -1      | 19599   | -1      |

| 31      | 32      | 33      | 34      | 35      | 36      | 37      | 38      | 39      | 40      |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 14000   | 0       | 14000   | 0       | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 14000   | 0       | 14000   | 0       | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 14000   | 0       | 14000   | 0       | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 0       | 14000   | 0       | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| -       | 14000   | -       | 14000   | 14.000  | 14000   | 14.000  | 14000   | 14.000  | 14000   |
| 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    |
| -129949 | -142872 | -141795 | -154718 | -167641 | -180564 | -193487 | -206410 | -219333 | -232256 |
| 130282  | 143205  | 142128  | 155051  | 167974  | 180897  | 193821  | 206744  | 219667  | 232590  |
| 130282  | 143205  | 142128  | 155051  | 167974  | 180897  | 193821  | 206744  | 219667  | 232590  |
| 143205  | 142128  | 155051  | 167974  | 180897  | 193821  | 206744  | 219667  | 232590  | 245513  |
| 0       | 925     | 0       | 925     | 925     | 925     | 925     | 925     | 925     | 925     |
| 0       | 3       | 0       | 0       | 0       | 3       | 0       | 0       | 0       | 3       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 0       | 922     | 0       | 925     | 925     | 922     | 925     | 925     | 925     | 922     |
| 0       | 922     | 0       | 925     | 925     | 922     | 925     | 925     | 925     | 922     |
| 922     | 0       | 925     | 925     | 922     | 925     | 925     | 925     | 922     | 925     |
| 0       | 616     | 0       | 616     | 616     | 616     | 616     | 616     | 616     | 616     |
| 0       | 1       | 0       | 1       | 0       | 1       | 0       | 1       | 0       | 1       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 0       | 615     | 0       | 615     | 616     | 615     | 616     | 615     | 616     | 615     |
| 0       | 615     | 0       | 615     | 616     | 615     | 616     | 615     | 616     | 615     |
| 615     | 0       | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     |
| 0       | 19600   | 0       | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   |
| 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| -1      | 19599   | -1      | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   |
| -1      | 19599   | -1      | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   |
| 19599   | -1      | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   |

| 41      | 42      | 43      | 44      | 45      | 46      | 47      | 48      | 49      | 50      | 51      | 52      |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 14.000  | 14000   | 14.000  | 14000   | 14.000  | 14000   | 14.000  | 14000   | 14.000  | 14000   | 14.000  | 14000   |
| 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    |
| -245179 | -258103 | -271026 | -283949 | -296872 | -309795 | -322718 | -335641 | -348564 | -361487 | -374410 | -387333 |
| 245513  | 258436  | 271359  | 284282  | 297205  | 310128  | 323051  | 335974  | 348897  | 361821  | 374744  | 387667  |
| 245513  | 258436  | 271359  | 284282  | 297205  | 310128  | 323051  | 335974  | 348897  | 361821  | 374744  | 387667  |
| 258436  | 271359  | 284282  | 297205  | 310128  | 323051  | 335974  | 348897  | 361821  | 374744  | 387667  | 400590  |
| 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     |
| 0       | 0       | 0       | 3       | 0       | 0       | 0       | 3       | 0       | 0       | 0       | 3       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 925     | 925     | 925     | 922     | 925     | 925     | 925     | 922     | 925     | 925     | 925     | 922     |
| 925     | 925     | 925     | 922     | 925     | 925     | 925     | 922     | 925     | 925     | 925     | 922     |
| 925     | 925     | 922     | 925     | 925     | 925     | 922     | 925     | 925     | 925     | 925     | 922     |
| 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     |
| 0       | 1       | 0       | 1       | 0       | 1       | 0       | 1       | 0       | 1       | 0       | 1       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     |
| 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     |
| 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     |
| 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   |
| 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   |
| 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   |
| 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   |

| 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11      | 12      |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   |
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 0       |
| 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 14000   | 0       |
| 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    | 1077    |
| -400256 | -413179 | -426103 | -439026 | -451949 | -464872 | -477795 | -490718 | -503641 | -516564 | -529487 | -528410 |
| 400590  | 413513  | 426436  | 439359  | 452282  | 465205  | 478128  | 491051  | 503974  | 516897  | 529821  | 528744  |
| 400590  | 413513  | 426436  | 439359  | 452282  | 465205  | 478128  | 491051  | 503974  | 516897  | 529821  | 528744  |
| 413513  | 426436  | 439359  | 452282  | 465205  | 478128  | 491051  | 503974  | 516897  | 529821  | 528744  | 0       |
| 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     | 925     | 0       |
| 0       | 0       | 0       | 3       | 0       | 0       | 0       | 3       | 0       | 0       | 0       | 3       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 925     | 925     | 925     | 922     | 925     | 925     | 925     | 922     | 925     | 925     | 925     | -3      |
| 925     | 925     | 925     | 922     | 925     | 925     | 925     | 922     | 925     | 925     | 925     | -3      |
| 925     | 925     | 922     | 925     | 925     | 925     | 922     | 925     | 925     | 925     | -3      | 0       |
| 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     | 616     | 0       |
| 0       | 1       | 0       | 1       | 0       | 1       | 0       | 1       | 0       | 1       | 0       | 1       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | -1      |
| 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | -1      |
| 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | 615     | 616     | -1      | 0       |
| 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 19600   | 0       |
| 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       |
| 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 0       |
| 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 0       |
| 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 19599   | 0       | 0       |

TABLA 20. TABLA DE DATOS MRP CAJA DE PIZZA MEDIANA

| CÓDIGO | DESCRIPCIÓN                   | NIVEL | INVENTARIO DISPONIBLE | STOCK DE SEGURIDAD | ELEMENTO PADRE  | REGISTRO DE INVENTARIOS CAJAS PARA PIZZA MEDIANA |                     |        | RECEPCIONES PROGRAMADAS |                  |  |
|--------|-------------------------------|-------|-----------------------|--------------------|-----------------|--|---------------------|--------|-------------------------|------------------|--|
|        |                               |       |                       |                    |                 | CANTIDAD CAJA ELABORAR EL ELEMENTO PADRE         | LEAD TIME (SEMANAS) | SEMANA | CANTIDAD                | UNIDAD DE MEDIDA |  |
|        |                               |       |                       |                    |                 |  |                     |        |                         |                  | CANTIDAD CAJA ELABORAR EL ELEMENTO PADRE |
| A      | CAJAS DE CARTÓN               | 0     | 14.000                | 0                  |                 | 14.000   | 1                   | 0      | 0                       | Caja             |  |
| B      | LÁMINAS DE CARTÓN (m)         | 1     | 2.000                 | 600                | CAJAS DE CARTÓN | 1.400  | 1                   | 13     | 1.400                   | Lámina           |  |
| C      | TINTA (ml)                    | 1     | 0,066                 | 0                  | CAJAS DE CARTÓN | 0,066  | 4                   | 16     | 3                       | Galón            |  |
| D      | PEGANTE (ml)                  | 1     | 0,044                 | 0                  | CAJAS DE CARTÓN | 0,044  | 2                   | 14     | 1                       | Galón            |  |
| E      | CINTA ABRAZADERA (rollo en m) | 1     | 1,4                   | 0                  | CAJAS DE CARTÓN | 1,4  | 1                   | 13     | 1                       | Rollo            |  |

TABLA 21. MRP PIZZA MEDIANA

| SEMANAS          |   | 13     | 14     | 15     | 16    | 17    | 18    | 19    | 20    |
|------------------|---|--------|--------|--------|-------|-------|-------|-------|-------|
| CAJAS            | NECESIDADES BRUTAS                              | 14000  | 14000  | 14000  | 14000 | 0     | 14000 | 0     | 14000 |
|                  | REC.PROGRAMADO                                  | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     |
|                  | DISPONIBLE                                      | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     |
|                  | NECESIDADES NETAS                               | 0      | 14000  | 14000  | 14000 | 14000 | 0     | 14000 | 0     |
|                  | RECEPCIÓN DE ORDEN                              | 0      | 14000  | 14000  | 14000 | 14000 | 0     | 14000 | 0     |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 14000  | 14000  | 14000  | 0     | 14000 | 0     | 14000 | 0     |
| LÁMINA DE CARTÓN | NECESIDADES BRUTAS                              | 14.000 | 14.000 | 14.000 | 0     | 14000 | 0     | 14000 | 0     |
|                  | REC.PROGRAMADO                                  | 1400   | 1400   | 1400   | 1400  | 1400  | 1400  | 1400  | 1400  |
|                  | DISPONIBLE                                      | 600    | 600    | 600    | 600   | 600   | 600   | 600   | 600   |
|                  | NECESIDADES NETAS                               | 11200  | 11200  | 11200  | -2800 | 11200 | -2800 | 11200 | -2800 |
|                  | RECEPCIÓN DE ORDEN                              | 11200  | 11200  | 11200  | -2800 | 11200 | -2800 | 11200 | -2800 |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 11200  | 11200  | -2800  | 11200 | -2800 | 11200 | -2800 | 11200 |
| TINTA            | NECESIDADES BRUTAS                              | 925    | 925    | 925    | 0     | 925   | 0     | 925   | 0     |
|                  | REC.PROGRAMADO                                  | 0      | 0      | 0      | 3     | 0     | 0     | 0     | 3     |
|                  | DISPONIBLE                                      | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     |
|                  | NECESIDADES NETAS                               | 925    | 925    | 925    | -3    | 925   | 0     | 925   | -3    |
|                  | RECEPCIÓN DE ORDEN                              | 925    | 925    | 925    | -3    | 925   | 0     | 925   | -3    |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 925    | 925    | -3     | 925   | 0     | 925   | -3    | 925   |
| PEGANTE          | NECESIDADES BRUTAS                              | 616    | 616    | 616    | 0     | 616   | 0     | 616   | 0     |
|                  | REC.PROGRAMADO                                  | 0      | 1      | 0      | 1     | 0     | 1     | 0     | 1     |
|                  | DISPONIBLE                                      | 13384  | 12768  | 12152  | 12153 | 11536 | 11537 | 10921 | 10922 |
|                  | NECESIDADES NETAS                               | 616    | 0      | 0      | 0     | 0     | 0     | 0     | 0     |
|                  | RECEPCIÓN DE ORDEN                              | 616    | 0      | 0      | 0     | 0     | 0     | 0     | 0     |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     |
| CINTA            | NECESIDADES BRUTAS                              | 19600  | 19600  | 19600  | 0     | 19600 | 0     | 19600 | 0     |
|                  | REC.PROGRAMADO                                  | 1      | 1      | 1      | 1     | 1     | 1     | 1     | 1     |
|                  | DISPONIBLE                                      | 0      | 0      | 0      | 0     | 0     | 0     | 0     | 0     |
|                  | NECESIDADES NETAS                               | 19598  | 19599  | 19599  | -1    | 19599 | -1    | 19599 | -1    |
|                  | RECEPCIÓN DE ORDEN                              | 19598  | 19599  | 19599  | -1    | 19599 | -1    | 19599 | -1    |
|                  | LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) | 19599  | 19599  | -1     | 19599 | -1    | 19599 | -1    | 19599 |

| 21    | 22     | 23     | 24     | 25     | 26     | 27     | 28     | 29    | 30    |
|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 0     | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000 | 0     |
| 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0     | 0     |
| 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0     | 0     |
| 0     | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000 | 0     |
| 0     | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000 | 0     |
| 14000 | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 0     | 14000 |
| 14000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 0     | 14000 |
| 1400  | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   | 1400  | 1400  |
| 600   | 600    | 600    | 600    | 600    | 600    | 600    | 600    | 600   | 600   |
| 11200 | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | -2800 | 11200 |
| 11200 | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | -2800 | 11200 |
| 11200 | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | -2800  | 11200 | -2800 |
| 925   | 925    | 925    | 925    | 925    | 925    | 925    | 925    | 0     | 925   |
| 0     | 0      | 0      | 3      | 0      | 0      | 0      | 3      | 0     | 0     |
| 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0     | 0     |
| 925   | 925    | 925    | 922    | 925    | 925    | 925    | 925    | 922   | 0     |
| 925   | 925    | 925    | 922    | 925    | 925    | 925    | 925    | 922   | 0     |
| 925   | 925    | 922    | 925    | 925    | 925    | 922    | 0      | 925   | 0     |
| 616   | 616    | 616    | 616    | 616    | 616    | 616    | 616    | 616   | 0     |
| 0     | 1      | 0      | 1      | 0      | 1      | 0      | 1      | 0     | 1     |
| 10305 | 9690   | 9073   | 8458   | 7841   | 7226   | 6609   | 5994   | 5994  | 5378  |
| 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0     | 0     |
| 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0     | 0     |
| 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0     | 0     |
| 19600 | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  | 0     | 19600 |
| 1     | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1     | 1     |
| 0     | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0     | 0     |
| 19599 | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | -1    | 19599 |
| 19599 | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | -1    | 19599 |
| 19599 | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | -1     | 19599 | -1    |

| 31    | 32    | 33    | 34    | 35     | 36     | 37     | 38     | 39     | 40     |
|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 14000 | 0     | 14000 | 0     | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  |
| 0     | 0     | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
| 0     | 0     | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
| 14000 | 0     | 14000 | 0     | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  |
| 14000 | 0     | 14000 | 0     | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  |
| 0     | 14000 | 0     | 14000 | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  |
| 0     | 14000 | 0     | 14000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 |
| 1400  | 1400  | 1400  | 1400  | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   |
| 600   | 600   | 600   | 600   | 600    | 600    | 600    | 600    | 600    | 600    |
| -2800 | 11200 | -2800 | 11200 | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  |
| -2800 | 11200 | -2800 | 11200 | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  |
| 11200 | -2800 | 11200 | 11200 | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  |
| 0     | 925   | 0     | 925   | 925    | 925    | 925    | 925    | 925    | 925    |
| 0     | 3     | 0     | 0     | 0      | 3      | 0      | 0      | 0      | 3      |
| 0     | 0     | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
| 0     | 922   | 0     | 925   | 925    | 922    | 925    | 925    | 925    | 922    |
| 0     | 922   | 0     | 925   | 925    | 922    | 925    | 925    | 925    | 922    |
| 922   | 0     | 925   | 925   | 922    | 925    | 925    | 925    | 925    | 922    |
| 0     | 616   | 0     | 616   | 616    | 616    | 616    | 616    | 616    | 616    |
| 0     | 1     | 0     | 1     | 0      | 1      | 0      | 1      | 0      | 1      |
| 5378  | 4763  | 4763  | 4147  | 3531   | 2915   | 2299   | 1683   | 1067   | 452    |
| 0     | 0     | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
| 0     | 0     | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
| 0     | 0     | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 165    |
| 0     | 19600 | 0     | 19600 | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  |
| 1     | 1     | 1     | 1     | 1      | 1      | 1      | 1      | 1      | 1      |
| 0     | 0     | 0     | 0     | 0      | 0      | 0      | 0      | 0      | 0      |
| -1    | 19599 | -1    | 19599 | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  |
| -1    | 19599 | -1    | 19599 | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  |
| 19599 | -1    | 19599 | 19599 | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  |

| 41     | 42     | 43     | 44     | 45     | 46     | 47     | 48     | 49     | 50     | 51     | 52     |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  |
| 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      |
| 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      |
| 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  |
| 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  |
| 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  | 14000  |
| 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 | 14.000 |
| 1400   | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   | 1400   |
| 600    | 600    | 600    | 600    | 600    | 600    | 600    | 600    | 600    | 600    | 600    | 600    |
| 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  |
| 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  |
| 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  | 11200  |
| 925    | 925    | 925    | 925    | 925    | 925    | 925    | 925    | 925    | 925    | 925    | 925    |
| 0      | 0      | 0      | 3      | 0      | 0      | 0      | 3      | 0      | 0      | 0      | 3      |
| 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      |
| 925    | 925    | 925    | 922    | 925    | 925    | 925    | 922    | 925    | 925    | 925    | 922    |
| 925    | 925    | 925    | 922    | 925    | 925    | 925    | 922    | 925    | 925    | 925    | 922    |
| 925    | 925    | 922    | 925    | 925    | 925    | 922    | 925    | 925    | 925    | 922    | 925    |
| 616    | 616    | 616    | 616    | 616    | 616    | 616    | 616    | 616    | 616    | 616    | 616    |
| 0      | 1      | 0      | 1      | 0      | 1      | 0      | 1      | 0      | 1      | 0      | 1      |
| 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      |
| 165    | 615    | 616    | 615    | 616    | 615    | 616    | 615    | 616    | 615    | 616    | 615    |
| 165    | 615    | 616    | 615    | 616    | 615    | 616    | 615    | 616    | 615    | 616    | 615    |
| 615    | 616    | 615    | 616    | 615    | 616    | 615    | 616    | 615    | 616    | 615    | 616    |
| 19600  | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  | 19600  |
| 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      |
| 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      |
| 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  |
| 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  |
| 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  | 19599  |



| 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0     |
| 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 0     |
| 1400  | 1400  | 1400  | 1400  | 1400  | 1400  | 1400  | 1400  | 1400  | 1400  | 1400  | 1400  |
| 600   | 600   | 600   | 600   | 600   | 600   | 600   | 600   | 600   | 600   | 600   | 600   |
| 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 0     |
| 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 0     |
| 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 11200 | 0     | 0     |
| 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 925   | 0     |
| 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     | 0     | 0     | 0     | 3     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     |
| 925   | 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     |
| 925   | 925   | 922   | 925   | 925   | 925   | 922   | 925   | 925   | 925   | 0     | 0     |
| 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 616   | 0     |
| 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     | 0     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     |
| 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     |
| 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 615   | 616   | 0     | 0     |
| 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 19600 | 0     |
| 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     |
| 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 19599 | 0     | 0     |

**TABLA 22. TABLA DE DATOS MRP CAJA DE ARCHIVO CON TAPA**

| CÓDIGO | DESCRIPCIÓN                   | NIVEL | INVENTARIO DISPONIBLE | STOCK DE SEGURIDAD | ELEMENTO PADRE  | CANTIDAD PARA ELABORAR EL ELEMENTO PADRE | LEAD TIME (SEMANAS) | RECEPCIONES PROGRAMADAS |          |                  |
|--------|-------------------------------|-------|-----------------------|--------------------|-----------------|--|---------------------|-------------------------|----------|------------------|
|        |                               |       |                       |                    |                 |  |                     | SEMANA                  | CANTIDAD | UNIDAD DE MEDIDA |
| A      | CAJAS DE CARTÓN               | 0     | 1.000                 | 0                  |                 | 1.000                                    | 1                   | 0                       | 0        |                  |
| B      | LÁMINAS DE CARTÓN (m)         | 1     | 800                   | 133                | CAJAS DE CARTÓN | 667                                      | 1                   | 13                      | 667      | Lámina           |
| C      | TINTA (ml)                    | 1     | 0.132                 |                    | CAJAS DE CARTÓN | 0.132                                    | 4                   | 16                      | 3        | Galón            |
| D      | PEGANTE (ml)                  | 1     | 0.088                 |                    | CAJAS DE CARTÓN | 0.088                                    | 2                   | 14                      | 1        | Galón            |
| E      | CINTA ABRAZADERA (rollo en m) | 1     | 2                     |                    | CAJAS DE CARTÓN | 2  | 1                   | 13                      | 1        | Rollo            |

**TABLA 23. MRP CAJA DE ARCHIVO CON TAPA**

| SEMANAS   |                    | 13          | 14         | 15          | 16          | 17          | 18          | 19   | 20         |
|---|--------------------|-------------|------------|-------------|-------------|-------------|-------------|------|------------|
| CAJAS   | NECESIDADES BRUTAS | 1000        | 1000       | 1000        | 1000        | 1000        | 0           | 1000 | 0          |
|   | REC.PROGRAMADO     | 0           | 0          | 0           | 0           | 0           | 0           | 0    | 0          |
|   | DISPONIBLE         | 0           | 0          | 0           | 0           | 0           | 0           | 0    | 0          |
|   | NECESIDADES NETAS  | 0           | 1000       | 1000        | 1000        | 1000        | 0           | 1000 | 0          |
|   | RECEPCIÓN DE ORDEN | 0           | 1000       | 1000        | 1000        | 1000        | 0           | 1000 | 0          |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 1000        | 1000       | 1000        | 1000        | 0           | 1000        | 0    | 1000       |
| LÁMINA DE CARTÓN                                | NECESIDADES BRUTAS | 1.000       | 1000       | 1000        | 1000        | 0           | 1000        | 0    | 1000       |
|   | REC.PROGRAMADO     | 667         | 667        | 667         | 667         | 667         | 667         | 667  | 667        |
|   | DISPONIBLE         | 467         | 133        | 200         | 533         | 133         | 200         | 467  | 133        |
|   | NECESIDADES NETAS  | 333         | 0          | 0           | 0           | 0           | 0           | 0    | 0          |
|   | RECEPCIÓN DE ORDEN | 467         | 133        | 200         | 533         | 133         | 200         | 467  | 133        |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 133         | 200        | 533         | 133         | 200         | 467         | 133  | 200        |
| TINTA   | NECESIDADES BRUTAS | 132         | 132,102273 | 132,1022727 | 132,1022727 | 0           | 132,1022727 | 0    | 132,102273 |
|   | REC.PROGRAMADO     | 0           | 0          | 0           | 0           | 3           | 0           | 0    | 3          |
|   | DISPONIBLE         | 0           | 0          | 0           | 0           | 0           | 0           | 0    | 0          |
|   | NECESIDADES NETAS  | 132         | 132,102273 | 132,1022727 | 0           | 0           | 132,1022727 | 0    | 0          |
|   | RECEPCIÓN DE ORDEN | 132         | 132,102273 | 132,1022727 | 0           | 0           | 132,1022727 | 0    | 0          |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 132,1022727 | 132,102273 | 0           | 0           | 132,1022727 | 0           | 0    | 132,102273 |
| PEGANTE   | NECESIDADES BRUTAS | 44          | 44,0340909 | 44,03409091 | 44,03409091 | 0           | 44,03409091 | 0    | 44,0340909 |
|   | REC.PROGRAMADO     | 0           | 1          | 0           | 1           | 0           | 1           | 0    | 1          |
|   | DISPONIBLE         | 0           | 0          | 0           | 0           | 0           | 0           | 0    | 0          |
|   | NECESIDADES NETAS  | 44          | 0          | 44,03409091 | 0           | 0           | 0           | 0    | 0          |
|   | RECEPCIÓN DE ORDEN | 44          | 0          | 44,03409091 | 0           | 0           | 0           | 0    | 0          |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 0           | 44,0340909 | 0           | 0           | 0           | 0           | 0    | 44,0340909 |
| CINTA   | NECESIDADES BRUTAS | 2000        | 2000       | 2000        | 2000        | 0           | 2000        | 0    | 2000       |
|   | REC.PROGRAMADO     | 1           | 1          | 1           | 1           | 1           | 1           | 1    | 1          |
|   | DISPONIBLE         | 0           | 0          | 0           | 0           | 0           | 0           | 0    | 0          |
|   | NECESIDADES NETAS  | 1997        | 0          | 0           | 0           | 0           | 0           | 0    | 0          |
|   | RECEPCIÓN DE ORDEN | 1997        | 0          | 0           | 0           | 0           | 0           | 0    | 0          |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 0           | 0          | 0           | 0           | 0           | 0           | 0    | 0          |

| 21          | 22          | 23         | 24         | 25         | 26         | 27         | 28         | 29         | 30         |
|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 667         | 667         | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        |
| - 200       | - 533       | - 867      | - 1.200    | - 1.533    | - 1.867    | - 2.200    | - 2.533    | - 2.867    | - 3.200    |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| - 200       | - 533       | - 867      | - 1.200    | - 1.533    | - 1.867    | - 2.200    | - 2.533    | - 2.867    | - 3.200    |
| - 533       | - 867       | - 1.200    | - 1.533    | - 1.867    | - 2.200    | - 2.533    | - 2.867    | - 3.200    | - 3.533    |
| 132,1022727 | 132,1022727 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 |
| 0           | 0           | 0          | 3          | 0          | 0          | 0          | 3          | 0          | 0          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 132,1022727 | 132,1022727 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 |
| 132,1022727 | 132,1022727 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 |
| 132,1022727 | 132,1022727 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 |
| 44,03409091 | 44,03409091 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 |
| 0           | 1           | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 44,03409091 | 0           | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          |
| 44,03409091 | 0           | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          |
| 0           | 44,03409091 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 |
| 2000        | 2000        | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       |
| 1           | 1           | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |

| 31         | 32         | 33         | 34         | 35         | 36         | 37         | 38         | 39         | 40         |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        |
| - 3.533    | - 3.867    | - 4.200    | - 4.533    | - 4.867    | - 5.200    | - 5.533    | - 5.867    | - 6.200    | - 6.533    |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| - 3.533    | - 3.867    | - 4.200    | - 4.533    | - 4.867    | - 5.200    | - 5.533    | - 5.867    | - 6.200    | - 6.533    |
| - 3.867    | - 4.200    | - 4.533    | - 4.867    | - 5.200    | - 5.533    | - 5.867    | - 6.200    | - 6.533    | - 6.867    |
| 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 |
| 0          | 3          | 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          |
| 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          |
| 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 |
| 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 |
| 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          |
| 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          |
| 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 |
| 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       |
| 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |

| 41         | 42         | 43         | 44         | 45         | 46         | 47         | 48         | 49         | 50         | 51         | 52         |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        |
| - 6.867    | - 7.200    | - 7.533    | - 7.867    | - 8.200    | - 8.533    | - 8.867    | - 9.200    | - 9.533    | - 9.867    | - 10.200   | - 10.533   |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| - 6.867    | - 7.200    | - 7.533    | - 7.867    | - 8.200    | - 8.533    | - 8.867    | - 9.200    | - 9.533    | - 9.867    | - 10.200   | - 10.533   |
| - 7.200    | - 7.533    | - 7.867    | - 8.200    | - 8.533    | - 8.867    | - 9.200    | - 9.533    | - 9.867    | - 10.200   | - 10.533   | - 10.867   |
| 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 |
| 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          |
| 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          |
| 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 |
| 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 |
| 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          |
| 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          |
| 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 |
| 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       |
| 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |

|            |            |            |            |            |            |            |            |            |            |            |          |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|
| 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8          | 9          | 10         | 11         | 12       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000     |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000     |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000     |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 0        |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 0        |
| 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667        | 667      |
| - 10.867   | - 11.200   | - 11.533   | - 11.867   | - 12.200   | - 12.533   | - 12.867   | - 13.200   | - 13.533   | - 13.867   | - 14.200   | - 13.533 |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| - 10.867   | - 11.200   | - 11.533   | - 11.867   | - 12.200   | - 12.533   | - 12.867   | - 13.200   | - 13.533   | - 13.867   | - 14.200   | - 13.533 |
| - 11.200   | - 11.533   | - 11.867   | - 12.200   | - 12.533   | - 12.867   | - 13.200   | - 13.533   | - 13.867   | - 14.200   | - 13.533   | 0        |
| 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 132,102273 | 0        |
| 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0        |
| 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0        |
| 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 132,102273 | 132,102273 | 132,102273 | 0          | 0        |
| 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 44,0340909 | 0        |
| 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0        |
| 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0        |
| 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 44,0340909 | 0          | 0        |
| 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 0        |
| 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |

TABLA 24. TABLA DE DATOS MRP CAJA DE ARCHIVO ESTÁNDAR

| CÓDIGO | DESCRIPCIÓN                   | NIVEL | REGISTRO DE INVENTARIOS CAJA PARA ARCHIVO ESTÁNDAR |                    |                 |                            |                     |        |          | RECEPCIONES PROGRAMADAS |               |  |
|--------|-------------------------------|-------|--|--------------------|-----------------|----------------------------|---------------------|--------|----------|-------------------------|---------------|--|
|        |                               |       | INVENTARIO DISPONIBLE                              | STOCK DE SEGURIDAD | ELEMENTO PADRE  | ELABORAR EL ELEMENTO PADRE | LEAD TIME (SEMANAS) | SEMANA | CANTIDAD | UNIDAD DE MEDIDA        |               |  |
|        |                               |       |  |                    |                 |                            |                     |        |          |                         | CANTIDAD FACT |  |
| A      | CAJAS DE CARTÓN               | 0     | 1.000  | 0                  |                 | 1.000                      | 1                   | 0      | 0        |                         |               |  |
| B      | LÁMINAS DE CARTÓN (m)         | 1     | 800  | 467                | CAJAS DE CARTÓN | 333                        | 1                   | 13     | 333      | Lámina                  |               |  |
| C      | TINTA (ml)                    | 1     | 0,132  | 0                  | CAJAS DE CARTÓN | 0,132                      | 4                   | 16     | 3        | Galón                   |               |  |
| D      | PEGANTE (ml)                  | 1     | 0,088  | 0                  | CAJAS DE CARTÓN | 0,088                      | 2                   | 14     | 1        | Galón                   |               |  |
| E      | CINTA ABRAZADERA (rollo en m) | 1     | 2  | 0                  | CAJAS DE CARTÓN | 2                          | 1                   | 13     | 1        | Rollo                   |               |  |

TABLA 25. MRP CAJA DE ARCHIVO ESTÁNDAR

| SEMANAS   |                    | 13         | 14         | 15          | 16          | 17          | 18          | 19          | 20          |
|---|--------------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
| CAJAS   | NECESIDADES BRUTAS | 1000       | 1000       | 1000        | 1000        | 1000        | 0           | 1000        | 0           |
|   | REC.PROGRAMADO     | 0          | 0          | 0           | 0           | 0           | 0           | 0           | 0           |
|   | DISPONIBLE         | -          | -1000      | 0           | 0           | 0           | 0           | 0           | 0           |
|   | NECESIDADES NETAS  | 0          | 1000       | 2000        | 1000        | 1000        | 0           | 1000        | 0           |
|   | RECEPCIÓN DE ORDEN | 0          | 1000       | 2000        | 1000        | 1000        | 0           | 1000        | 0           |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 1000       | 2000       | 1000        | 1000        | 0           | 1000        | 0           | 1000        |
| LÁMINA DE CARTÓN                                | NECESIDADES BRUTAS | 1.000      | 2000       | 1000        | 1000        | 0           | 1000        | 0           | 1000        |
|   | REC.PROGRAMADO     | 333        | 333        | 333         | 333         | 333         | 333         | 333         | 333         |
|   | DISPONIBLE         | 133        | - 1.533    | - 2.200     | - 2.867     | - 2.533     | - 3.200     | - 2.867     | - 3.533     |
|   | NECESIDADES NETAS  | 333        | 2.133      | 1.133       | 1.133       | 133         | 1.133       | 133         | 1.133       |
|   | RECEPCIÓN DE ORDEN | - 333      | 1.133      | - 2.200     | - 2.867     | - 2.533     | - 3.200     | - 2.867     | - 3.533     |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 1.133      | - 2.200    | - 2.867     | - 2.533     | - 3.200     | - 2.867     | - 3.533     | - 4.200     |
| TINTA   | NECESIDADES BRUTAS | 132        | 264,205    | 132,102     | 132,102     | -           | 132,102     | -           | 132,102     |
|   | REC.PROGRAMADO     | 0          | 0          | 0           | 0           | 3           | 0           | 0           | 3           |
|   | DISPONIBLE         | 0          | 0          | 0           | 0           | 0           | 0           | 0           | 0           |
|   | NECESIDADES NETAS  | 132        | 264,205    | 132,102     | 129,102     | -           | 132,102     | -           | 129,102     |
|   | RECEPCIÓN DE ORDEN | 132        | 264,204545 | 132,1022727 | 129,1022727 | 0           | 132,1022727 | 0           | 129,1022727 |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 264,204545 | 132,102273 | 129,1022727 | 0           | 132,1022727 | 0           | 129,1022727 | 132,102273  |
| PEGANTE   | NECESIDADES BRUTAS | 88         | 176        | 88          | 88          | -           | 88          | -           | 88          |
|   | REC.PROGRAMADO     | 0          | 1          | 0           | 1           | 0           | 1           | 0           | 1           |
|   | DISPONIBLE         | 0          | 0          | 0           | 0           | 0           | 0           | 0           | 0           |
|   | NECESIDADES NETAS  | 88         | 0          | 88          | 87          | -           | 87          | -           | 87          |
|   | RECEPCIÓN DE ORDEN | 88         | 0          | 88,06818182 | 87,06818182 | 0           | 87,06818182 | 0           | 87,06818182 |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 0          | 88,0681818 | 87,06818182 | 0           | 87,06818182 | 0           | 87,06818182 | 88,0681818  |
| CINTA   | NECESIDADES BRUTAS | 2000       | 4000       | 2000        | 2000        | 0           | 2000        | 0           | 2000        |
|   | REC.PROGRAMADO     | 1          | 1          | 1           | 1           | 1           | 1           | 1           | 1           |
|   | DISPONIBLE         | 0          | 0          | 0           | 0           | 0           | 0           | 0           | 0           |
|   | NECESIDADES NETAS  | 1997       | 3997       | 1997        | 1997        | -3          | 1997        | -3          | 1997        |
|   | RECEPCIÓN DE ORDEN | 1997       | 3997       | 1997        | 1997        | -3          | 1997        | -3          | 1997        |
| LANZAMIENTO DE ORDEN ( SE INICIA LA PRODUCCIÓN) |                    | 3997       | 1997       | 1997        | -3          | 1997        | -3          | 1997        | 1997        |

| 21          | 22          | 23         | 24         | 25         | 26         | 27         | 28         | 29         | 30         |
|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000        | 1000        | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 333         | 333         | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        |
| - 4.200     | - 4.867     | - 5.533    | - 6.200    | - 6.867    | - 7.533    | - 8.200    | - 8.867    | - 9.533    | - 10.200   |
| 1.133       | 1.133       | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      |
| - 4.200     | - 4.867     | - 5.533    | - 6.200    | - 6.867    | - 7.533    | - 8.200    | - 8.867    | - 9.533    | - 10.200   |
| - 4.867     | - 5.533     | - 6.200    | - 6.867    | - 7.533    | - 8.200    | - 8.867    | - 9.533    | - 10.200   | - 10.867   |
| 132,102     | 132,102     | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    |
| 0           | 0           | 0          | 3          | 0          | 0          | 0          | 3          | 0          | 0          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 132,102     | 132,102     | 132,102    | 129,102    | 132,102    | 132,102    | 132,102    | 129,102    | 132,102    | 132,102    |
| 132,1022727 | 132,1022727 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 |
| 132,1022727 | 132,1022727 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 |
| 88          | 88          | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         |
| 0           | 1           | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 88          | 87          | 88         | 87         | 88         | 87         | 88         | 87         | 88         | 87         |
| 88,06818182 | 87,06818182 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 |
| 87,06818182 | 88,06818182 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 |
| 2000        | 2000        | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       |
| 1           | 1           | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          |
| 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1997        | 1997        | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |
| 1997        | 1997        | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |
| 1997        | 1997        | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |

| 31         | 32         | 33         | 34         | 35         | 36         | 37         | 38         | 39         | 40         |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        |
| - 10.867   | - 11.533   | - 12.200   | - 12.867   | - 13.533   | - 14.200   | - 14.867   | - 15.533   | - 16.200   | - 16.867   |
| 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      |
| - 10.867   | - 11.533   | - 12.200   | - 12.867   | - 13.533   | - 14.200   | - 14.867   | - 15.533   | - 16.200   | - 16.867   |
| - 11.533   | - 12.200   | - 12.867   | - 13.533   | - 14.200   | - 14.867   | - 15.533   | - 16.200   | - 16.867   | - 17.533   |
| 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    |
| 0          | 3          | 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 132,102    | 129,102    | 132,102    | 132,102    | 132,102    | 129,102    | 132,102    | 132,102    | 132,102    | 129,102    |
| 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 |
| 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 |
| 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         |
| 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 88         | 87         | 88         | 87         | 88         | 87         | 88         | 87         | 88         | 87         |
| 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 |
| 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 |
| 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       |
| 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |

| 41         | 42         | 43         | 44         | 45         | 46         | 47         | 48         | 49         | 50         | 51         | 52         |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       |
| 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        |
| - 17.533   | - 18.200   | - 18.867   | - 19.533   | - 20.200   | - 20.867   | - 21.533   | - 22.200   | - 22.867   | - 23.533   | - 24.200   | - 24.867   |
| 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      |
| - 17.533   | - 18.200   | - 18.867   | - 19.533   | - 20.200   | - 20.867   | - 21.533   | - 22.200   | - 22.867   | - 23.533   | - 24.200   | - 24.867   |
| - 18.200   | - 18.867   | - 19.533   | - 20.200   | - 20.867   | - 21.533   | - 22.200   | - 22.867   | - 23.533   | - 24.200   | - 24.867   | - 25.533   |
| 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    |
| 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 132,102    | 132,102    | 132,102    | 129,102    | 132,102    | 132,102    | 132,102    | 129,102    | 132,102    | 132,102    | 132,102    | 129,102    |
| 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 |
| 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 |
| 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         |
| 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 88         | 87         | 88         | 87         | 88         | 87         | 88         | 87         | 88         | 87         | 88         | 87         |
| 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 |
| 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 |
| 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       |
| 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       |

| 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8          | 9          | 10         | 11         | 12       |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|----------|
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000     |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000     |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000     |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 0        |
| 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 1000       | 0        |
| 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333        | 333      |
| - 25.533   | - 26.200   | - 26.867   | - 27.533   | - 28.200   | - 28.867   | - 29.533   | - 30.200   | - 30.867   | - 31.533   | - 32.200   | - 31.867 |
| 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 1.133      | 133      |
| - 25.533   | - 26.200   | - 26.867   | - 27.533   | - 28.200   | - 28.867   | - 29.533   | - 30.200   | - 30.867   | - 31.533   | - 32.200   | - 31.867 |
| - 26.200   | - 26.867   | - 27.533   | - 28.200   | - 28.867   | - 29.533   | - 30.200   | - 30.867   | - 31.533   | - 32.200   | - 31.867   | 0        |
| 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | 132,102    | -        |
| 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3          | 0          | 0          | 0          | 3        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 132,102    | 132,102    | 132,102    | 129,102    | 132,102    | 132,102    | 132,102    | 129,102    | 132,102    | 132,102    | 132,102    | - 3,000  |
| 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | -3       |
| 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | 129,102273 | 132,102273 | 132,102273 | 132,102273 | -3         | 0        |
| 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 88         | 0        |
| 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1          | 0          | 1        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 88         | 87         | 88         | 87         | 88         | 87         | 88         | 87         | 88         | 87         | 88         | - 1      |
| 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | -1       |
| 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | 87,0681818 | 88,0681818 | -1         | 0        |
| 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 2000       | 0        |
| 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1          | 1        |
| 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0        |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | -3       |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | -3       |
| 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | 1997       | -3       |

## ANEXO 4. INSPECCIÓN E INVENTARIOS

TABLA. 26

| Tipo de defecto | PNC Diario | % individual | Frecuencia acumulada | % acumulado |
|-----------------|------------|--------------|----------------------|-------------|
| Pegado          | 91         | 30,3         | 91                   | 30,3        |
| Corte           | 81         | 27,0         | 172                  | 57,3        |
| Dureza          | 53         | 17,7         | 225                  | 75,0        |
| Resistencia     | 47         | 15,7         | 272                  | 90,7        |
| Estampado       | 17         | 5,7          | 289                  | 96,3        |
| Enzunchado      | 11         | 3,7          | 300                  | 100,0       |
| <b>Total</b>    |            | 300          | 100,0                |             |

GRÁFICO 6.

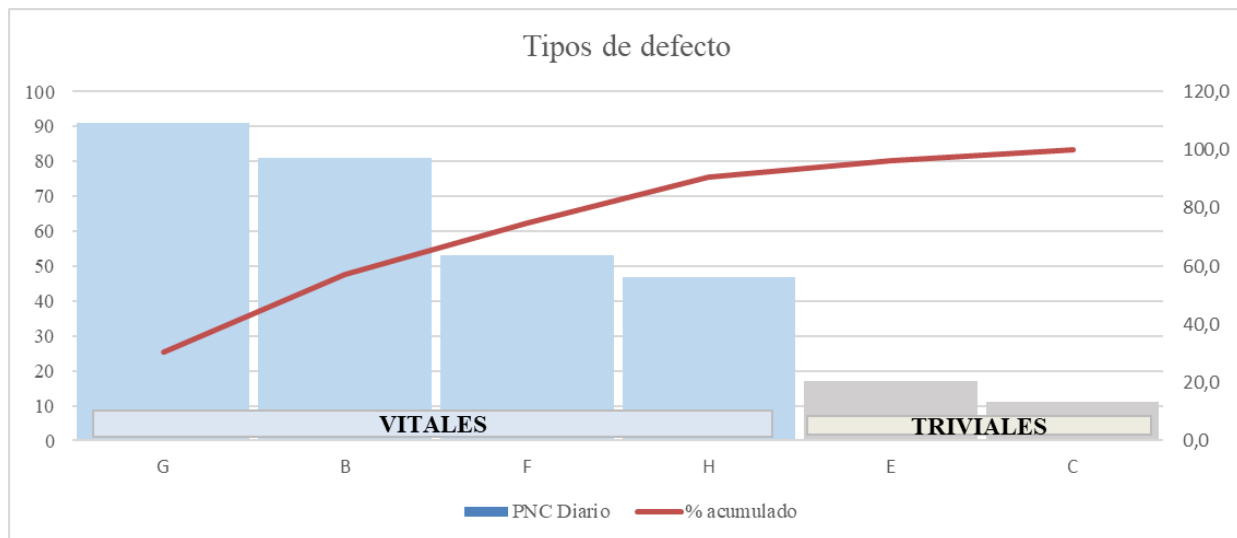


TABLA 27. CALCULO PARA EL CONTROL DE DATOS

|   |            |              |
|---|------------|--------------|
| $\bar{np} = \frac{\sum np}{k}$                            | $\bar{np}$ | 0,3000       |
| $\bar{p} = \frac{\bar{np}}{n}$                            | $\bar{p}$  | 0,003        |
| $LCS = \bar{np} + 3 \sqrt{\bar{np} \times (1 - \bar{p})}$ | $LCS$      | 2            |
| $LC = \bar{np}$   | $LC$       | 0,3000       |
| $LCI = \bar{np} - 3 \sqrt{\bar{np} \times (1 - \bar{p})}$ | $LCI$      | -1,345630578 |



TABLA 28. DATOS NP.

| Muestra | np | 51  | 0 | 101 | 0 | 151 | 2 |
|---------|----|-----|---|-----|---|-----|---|
| 1       | 0  | 52  | 0 | 102 | 0 | 152 | 2 |
| 2       | 0  | 53  | 0 | 103 | 0 | 153 | 1 |
| 3       | 1  | 54  | 1 | 104 | 0 | 154 | 0 |
| 4       | 2  | 55  | 6 | 105 | 0 | 155 | 0 |
| 5       | 0  | 56  | 0 | 106 | 0 | 156 | 1 |
| 6       | 1  | 57  | 2 | 107 | 1 | 157 | 0 |
| 7       | 1  | 58  | 0 | 108 | 0 | 158 | 0 |
| 8       | 0  | 59  | 0 | 109 | 0 | 159 | 0 |
| 9       | 0  | 60  | 0 | 110 | 0 | 160 | 0 |
| 10      | 0  | 61  | 0 | 111 | 0 | 161 | 0 |
| 11      | 0  | 62  | 0 | 112 | 0 | 162 | 0 |
| 12      | 1  | 63  | 0 | 113 | 2 | 163 | 5 |
| 13      | 1  | 64  | 0 | 114 | 0 | 164 | 0 |
| 14      | 1  | 65  | 0 | 115 | 0 | 165 | 0 |
| 15      | 0  | 66  | 1 | 116 | 0 | 166 | 0 |
| 16      | 0  | 67  | 0 | 117 | 0 | 167 | 0 |
| 17      | 1  | 68  | 3 | 118 | 0 | 168 | 0 |
| 18      | 0  | 69  | 0 | 119 | 0 | 169 | 0 |
| 19      | 0  | 70  | 0 | 120 | 0 | 170 | 0 |
| 20      | 1  | 71  | 0 | 121 | 0 | 171 | 0 |
| 21      | 0  | 72  | 0 | 122 | 0 | 172 | 0 |
| 22      | 0  | 73  | 0 | 123 | 0 | 173 | 0 |
| 23      | 0  | 74  | 1 | 124 | 0 | 174 | 1 |
| 24      | 0  | 75  | 1 | 125 | 0 | 175 | 1 |
| 25      | 1  | 76  | 1 | 126 | 0 | 176 | 3 |
| 26      | 1  | 77  | 3 | 127 | 0 | 177 | 0 |
| 27      | 0  | 78  | 0 | 128 | 0 | 178 | 0 |
| 28      | 0  | 79  | 0 | 129 | 0 | 179 | 0 |
| 29      | 0  | 80  | 0 | 130 | 0 | 180 | 0 |
| 30      | 0  | 81  | 0 | 131 | 0 | 181 | 0 |
| 31      | 0  | 82  | 0 | 132 | 2 | 182 | 0 |
| 32      | 0  | 83  | 0 | 133 | 0 | 183 | 0 |
| 33      | 0  | 84  | 0 | 134 | 0 | 184 | 0 |
| 34      | 0  | 85  | 3 | 135 | 0 | 185 | 0 |
| 35      | 0  | 86  | 0 | 136 | 0 | 186 | 0 |
| 36      | 1  | 87  | 0 | 137 | 0 | 187 | 0 |
| 37      | 0  | 88  | 0 | 138 | 0 | 188 | 0 |
| 38      | 0  | 89  | 0 | 139 | 0 | 189 | 0 |
| 39      | 1  | 90  | 0 | 140 | 0 | 190 | 0 |
| 40      | 1  | 91  | 0 | 141 | 0 | 191 | 0 |
| 41      | 0  | 92  | 0 | 142 | 1 | 192 | 0 |
| 42      | 0  | 93  | 0 | 143 | 0 | 193 | 0 |
| 43      | 0  | 94  | 0 | 144 | 0 | 194 | 0 |
| 44      | 0  | 95  | 5 | 145 | 0 | 195 | 3 |
| 45      | 0  | 96  | 0 | 146 | 0 | 196 | 0 |
| 46      | 5  | 97  | 0 | 147 | 0 | 197 | 2 |
| 47      | 6  | 98  | 0 | 148 | 4 | 198 | 0 |
| 48      | 1  | 99  | 0 | 149 | 0 | 199 | 0 |
| 49      | 0  | 100 | 1 | 150 | 0 | 200 | 2 |

|     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|
| 201 | 0 | 251 | 0 | 301 | 0 | 351 | 0 |
| 202 | 0 | 252 | 0 | 302 | 0 | 352 | 0 |
| 203 | 0 | 253 | 0 | 303 | 0 | 353 | 0 |
| 204 | 0 | 254 | 0 | 304 | 0 | 354 | 0 |
| 205 | 0 | 255 | 0 | 305 | 0 | 355 | 1 |
| 206 | 0 | 256 | 0 | 306 | 0 | 356 | 0 |
| 207 | 0 | 257 | 0 | 307 | 0 | 357 | 1 |
| 208 | 0 | 258 | 3 | 308 | 0 | 358 | 0 |
| 209 | 0 | 259 | 0 | 309 | 0 | 359 | 0 |
| 210 | 0 | 260 | 0 | 310 | 0 | 360 | 2 |
| 211 | 0 | 261 | 0 | 311 | 0 | 361 | 0 |
| 212 | 0 | 262 | 0 | 312 | 0 | 362 | 0 |
| 213 | 0 | 263 | 1 | 313 | 0 | 363 | 0 |
| 214 | 0 | 264 | 0 | 314 | 1 | 364 | 0 |
| 215 | 0 | 265 | 0 | 315 | 1 | 365 | 0 |
| 216 | 0 | 266 | 0 | 316 | 0 | 366 | 0 |
| 217 | 0 | 267 | 0 | 317 | 0 | 367 | 0 |
| 218 | 0 | 268 | 0 | 318 | 0 | 368 | 0 |
| 219 | 0 | 269 | 0 | 319 | 3 | 369 | 0 |
| 220 | 0 | 270 | 0 | 320 | 0 | 370 | 0 |
| 221 | 0 | 271 | 2 | 321 | 1 | 371 | 0 |
| 222 | 0 | 272 | 0 | 322 | 0 | 372 | 0 |
| 223 | 0 | 273 | 0 | 323 | 0 | 373 | 1 |
| 224 | 2 | 274 | 1 | 324 | 0 | 374 | 0 |
| 225 | 0 | 275 | 0 | 325 | 0 | 375 | 0 |
| 226 | 0 | 276 | 1 | 326 | 0 | 376 | 0 |
| 227 | 0 | 277 | 3 | 327 | 1 | 377 | 0 |
| 228 | 0 | 278 | 0 | 328 | 0 | 378 | 0 |
| 229 | 0 | 279 | 0 | 329 | 0 | 379 | 0 |
| 230 | 1 | 280 | 0 | 330 | 0 | 380 | 0 |
| 231 | 1 | 281 | 0 | 331 | 0 | 381 | 0 |
| 232 | 0 | 282 | 0 | 332 | 0 | 382 | 3 |
| 233 | 0 | 283 | 0 | 333 | 0 | 383 | 0 |
| 234 | 2 | 284 | 0 | 334 | 2 | 384 | 0 |
| 235 | 0 | 285 | 0 | 335 | 0 | 385 | 0 |
| 236 | 0 | 286 | 0 | 336 | 0 | 386 | 0 |
| 237 | 0 | 287 | 0 | 337 | 0 | 387 | 0 |
| 238 | 0 | 288 | 0 | 338 | 0 | 388 | 0 |
| 239 | 0 | 289 | 0 | 339 | 0 | 389 | 1 |
| 240 | 0 | 290 | 0 | 340 | 0 | 390 | 0 |
| 241 | 0 | 291 | 0 | 341 | 0 | 391 | 0 |
| 242 | 0 | 292 | 0 | 342 | 1 | 392 | 1 |
| 243 | 0 | 293 | 0 | 343 | 1 | 393 | 0 |
| 244 | 0 | 294 | 0 | 344 | 3 | 394 | 0 |
| 245 | 0 | 295 | 0 | 345 | 0 | 395 | 0 |
| 246 | 0 | 296 | 1 | 346 | 0 | 396 | 0 |
| 247 | 0 | 297 | 0 | 347 | 0 | 397 | 1 |
| 248 | 0 | 298 | 0 | 348 | 0 | 398 | 0 |
| 249 | 0 | 299 | 0 | 349 | 0 | 399 | 0 |
| 250 | 0 | 300 | 0 | 350 | 0 | 400 | 1 |

|     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|
| 401 | 0 | 451 | 0 | 501 | 5 | 551 | 0 |
| 402 | 0 | 452 | 0 | 502 | 0 | 552 | 0 |
| 403 | 0 | 453 | 0 | 503 | 0 | 553 | 0 |
| 404 | 0 | 454 | 0 | 504 | 0 | 554 | 0 |
| 405 | 0 | 455 | 0 | 505 | 0 | 555 | 0 |
| 406 | 0 | 456 | 0 | 506 | 0 | 556 | 0 |
| 407 | 0 | 457 | 0 | 507 | 0 | 557 | 2 |
| 408 | 3 | 458 | 0 | 508 | 0 | 558 | 0 |
| 409 | 0 | 459 | 0 | 509 | 0 | 559 | 4 |
| 410 | 0 | 460 | 0 | 510 | 0 | 560 | 1 |
| 411 | 0 | 461 | 1 | 511 | 0 | 561 | 0 |
| 412 | 0 | 462 | 0 | 512 | 4 | 562 | 0 |
| 413 | 1 | 463 | 0 | 513 | 0 | 563 | 0 |
| 414 | 0 | 464 | 0 | 514 | 0 | 564 | 0 |
| 415 | 4 | 465 | 1 | 515 | 0 | 565 | 1 |
| 416 | 1 | 466 | 1 | 516 | 0 | 566 | 0 |
| 417 | 0 | 467 | 0 | 517 | 0 | 567 | 0 |
| 418 | 3 | 468 | 2 | 518 | 0 | 568 | 0 |
| 419 | 0 | 469 | 0 | 519 | 4 | 569 | 0 |
| 420 | 0 | 470 | 0 | 520 | 0 | 570 | 0 |
| 421 | 0 | 471 | 0 | 521 | 0 | 571 | 0 |
| 422 | 0 | 472 | 0 | 522 | 0 | 572 | 1 |
| 423 | 0 | 473 | 0 | 523 | 0 | 573 | 0 |
| 424 | 0 | 474 | 0 | 524 | 0 | 574 | 0 |
| 425 | 0 | 475 | 0 | 525 | 2 | 575 | 0 |
| 426 | 1 | 476 | 0 | 526 | 0 | 576 | 1 |
| 427 | 0 | 477 | 0 | 527 | 0 | 577 | 2 |
| 428 | 0 | 478 | 0 | 528 | 0 | 578 | 2 |
| 429 | 0 | 479 | 0 | 529 | 0 | 579 | 0 |
| 430 | 0 | 480 | 0 | 530 | 0 | 580 | 0 |
| 431 | 0 | 481 | 1 | 531 | 0 | 581 | 0 |
| 432 | 1 | 482 | 0 | 532 | 0 | 582 | 0 |
| 433 | 0 | 483 | 0 | 533 | 0 | 583 | 0 |
| 434 | 0 | 484 | 0 | 534 | 0 | 584 | 0 |
| 435 | 0 | 485 | 1 | 535 | 0 | 585 | 0 |
| 436 | 0 | 486 | 1 | 536 | 0 | 586 | 0 |
| 437 | 0 | 487 | 0 | 537 | 0 | 587 | 0 |
| 438 | 0 | 488 | 2 | 538 | 0 | 588 | 0 |
| 439 | 0 | 489 | 0 | 539 | 0 | 589 | 0 |
| 440 | 0 | 490 | 0 | 540 | 0 | 590 | 0 |
| 441 | 0 | 491 | 0 | 541 | 0 | 591 | 0 |
| 442 | 0 | 492 | 0 | 542 | 0 | 592 | 2 |
| 443 | 0 | 493 | 0 | 543 | 0 | 593 | 0 |
| 444 | 0 | 494 | 0 | 544 | 0 | 594 | 0 |
| 445 | 0 | 495 | 0 | 545 | 0 | 595 | 0 |
| 446 | 0 | 496 | 0 | 546 | 0 | 596 | 0 |
| 447 | 0 | 497 | 0 | 547 | 3 | 597 | 0 |
| 448 | 0 | 498 | 0 | 548 | 0 | 598 | 0 |
| 449 | 0 | 499 | 0 | 549 | 0 | 599 | 0 |
| 450 | 3 | 500 | 0 | 550 | 2 | 600 | 0 |

|     |   |
|-----|---|
| 601 | 0 |
| 602 | 0 |
| 603 | 0 |
| 604 | 1 |
| 605 | 0 |
| 606 | 0 |
| 607 | 0 |
| 608 | 0 |
| 609 | 1 |
| 610 | 0 |
| 611 | 0 |
| 612 | 0 |
| 613 | 1 |
| 614 | 0 |
| 615 | 0 |
| 616 | 0 |
| 617 | 0 |
| 618 | 2 |
| 619 | 0 |
| 620 | 0 |
| 621 | 0 |
| 622 | 0 |
| 623 | 0 |
| 624 | 0 |
| 625 | 0 |
| 626 | 0 |
| 627 | 0 |
| 628 | 0 |
| 629 | 0 |
| 630 | 0 |
| 631 | 0 |
| 632 | 0 |
| 633 | 0 |
| 634 | 0 |
| 635 | 0 |
| 636 | 3 |
| 637 | 0 |
| 638 | 0 |
| 639 | 0 |
| 640 | 0 |
| 641 | 0 |
| 642 | 0 |
| 643 | 0 |
| 644 | 0 |
| 645 | 0 |
| 646 | 0 |
| 647 | 0 |
| 648 | 0 |
| 649 | 0 |
| 650 | 0 |

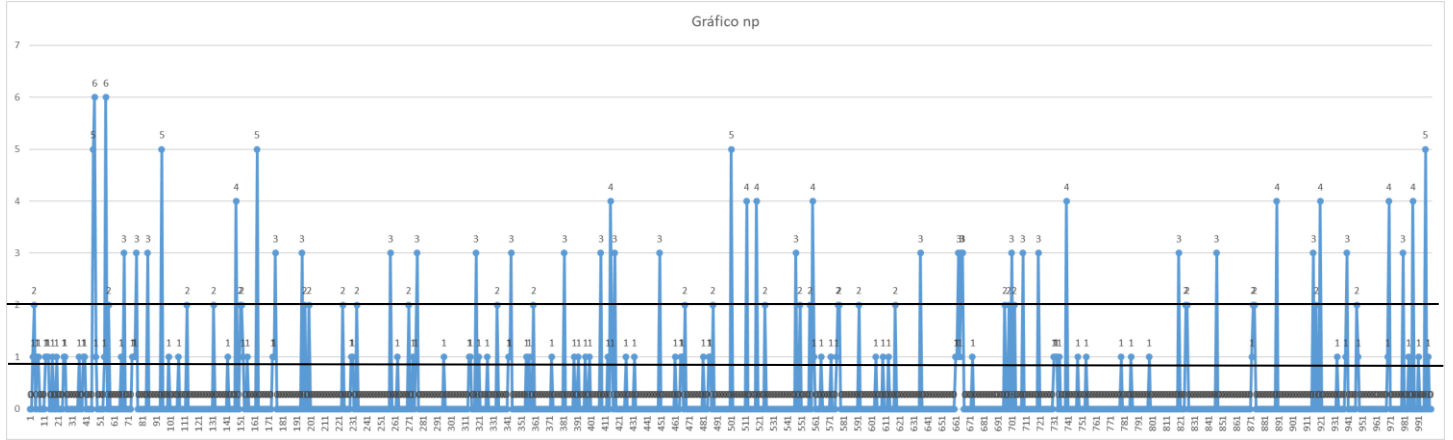
|     |   |
|-----|---|
| 651 | 0 |
| 652 | 0 |
| 653 | 0 |
| 654 | 0 |
| 655 | 0 |
| 656 | 0 |
| 657 | 0 |
| 658 | 0 |
| 659 | 0 |
| 660 | 0 |
| 661 | 1 |
| 662 | 1 |
| 663 | 3 |
| 664 | 1 |
| 665 | 3 |
| 666 | 3 |
| 667 | 0 |
| 668 | 0 |
| 669 | 0 |
| 670 | 0 |
| 671 | 0 |
| 672 | 0 |
| 673 | 1 |
| 674 | 0 |
| 675 | 0 |
| 676 | 0 |
| 677 | 0 |
| 678 | 0 |
| 679 | 0 |
| 680 | 0 |
| 681 | 0 |
| 682 | 0 |
| 683 | 0 |
| 684 | 0 |
| 685 | 0 |
| 686 | 0 |
| 687 | 0 |
| 688 | 0 |
| 689 | 0 |
| 690 | 0 |
| 691 | 0 |
| 692 | 0 |
| 693 | 0 |
| 694 | 0 |
| 695 | 0 |
| 696 | 2 |
| 697 | 0 |
| 698 | 0 |
| 699 | 2 |
| 700 | 0 |

|     |   |
|-----|---|
| 701 | 3 |
| 702 | 0 |
| 703 | 2 |
| 704 | 0 |
| 705 | 0 |
| 706 | 0 |
| 707 | 0 |
| 708 | 0 |
| 709 | 3 |
| 710 | 0 |
| 711 | 0 |
| 712 | 0 |
| 713 | 0 |
| 714 | 0 |
| 715 | 0 |
| 716 | 0 |
| 717 | 0 |
| 718 | 0 |
| 719 | 0 |
| 720 | 3 |
| 721 | 0 |
| 722 | 0 |
| 723 | 0 |
| 724 | 0 |
| 725 | 0 |
| 726 | 0 |
| 727 | 0 |
| 728 | 0 |
| 729 | 0 |
| 730 | 0 |
| 731 | 1 |
| 732 | 1 |
| 733 | 1 |
| 734 | 0 |
| 735 | 1 |
| 736 | 0 |
| 737 | 0 |
| 738 | 0 |
| 739 | 0 |
| 740 | 4 |
| 741 | 0 |
| 742 | 0 |
| 743 | 0 |
| 744 | 0 |
| 745 | 0 |
| 746 | 0 |
| 747 | 0 |
| 748 | 1 |
| 749 | 0 |
| 750 | 0 |

|     |   |
|-----|---|
| 751 | 0 |
| 752 | 0 |
| 753 | 0 |
| 754 | 1 |
| 755 | 0 |
| 756 | 0 |
| 757 | 0 |
| 758 | 0 |
| 759 | 0 |
| 760 | 0 |
| 761 | 0 |
| 762 | 0 |
| 763 | 0 |
| 764 | 0 |
| 765 | 0 |
| 766 | 0 |
| 767 | 0 |
| 768 | 0 |
| 769 | 0 |
| 770 | 0 |
| 771 | 0 |
| 772 | 0 |
| 773 | 0 |
| 774 | 0 |
| 775 | 0 |
| 776 | 0 |
| 777 | 0 |
| 778 | 0 |
| 779 | 1 |
| 780 | 0 |
| 781 | 0 |
| 782 | 0 |
| 783 | 0 |
| 784 | 0 |
| 785 | 0 |
| 786 | 1 |
| 787 | 0 |
| 788 | 0 |
| 789 | 0 |
| 790 | 0 |
| 791 | 0 |
| 792 | 0 |
| 793 | 0 |
| 794 | 0 |
| 795 | 0 |
| 796 | 0 |
| 797 | 0 |
| 798 | 0 |
| 799 | 1 |
| 800 | 0 |

|     |   |     |   |     |   |      |     |
|-----|---|-----|---|-----|---|------|-----|
| 801 | 0 | 851 | 0 | 901 | 0 | 951  | 0   |
| 802 | 0 | 852 | 0 | 902 | 0 | 952  | 0   |
| 803 | 0 | 853 | 0 | 903 | 0 | 953  | 0   |
| 804 | 0 | 854 | 0 | 904 | 0 | 954  | 0   |
| 805 | 0 | 855 | 0 | 905 | 0 | 955  | 0   |
| 806 | 0 | 856 | 0 | 906 | 0 | 956  | 0   |
| 807 | 0 | 857 | 0 | 907 | 0 | 957  | 0   |
| 808 | 0 | 858 | 0 | 908 | 0 | 958  | 0   |
| 809 | 0 | 859 | 0 | 909 | 0 | 959  | 0   |
| 810 | 0 | 860 | 0 | 910 | 0 | 960  | 0   |
| 811 | 0 | 861 | 0 | 911 | 0 | 961  | 0   |
| 812 | 0 | 862 | 0 | 912 | 0 | 962  | 0   |
| 813 | 0 | 863 | 0 | 913 | 0 | 963  | 0   |
| 814 | 0 | 864 | 0 | 914 | 0 | 964  | 0   |
| 815 | 0 | 865 | 0 | 915 | 0 | 965  | 0   |
| 816 | 0 | 866 | 0 | 916 | 3 | 966  | 0   |
| 817 | 0 | 867 | 0 | 917 | 0 | 967  | 0   |
| 818 | 0 | 868 | 0 | 918 | 2 | 968  | 0   |
| 819 | 0 | 869 | 0 | 919 | 0 | 969  | 1   |
| 820 | 3 | 870 | 0 | 920 | 0 | 970  | 4   |
| 821 | 0 | 871 | 0 | 921 | 4 | 971  | 0   |
| 822 | 0 | 872 | 1 | 922 | 0 | 972  | 0   |
| 823 | 0 | 873 | 2 | 923 | 0 | 973  | 0   |
| 824 | 0 | 874 | 2 | 924 | 0 | 974  | 0   |
| 825 | 2 | 875 | 0 | 925 | 0 | 975  | 0   |
| 826 | 2 | 876 | 0 | 926 | 0 | 976  | 0   |
| 827 | 0 | 877 | 0 | 927 | 0 | 977  | 0   |
| 828 | 0 | 878 | 0 | 928 | 0 | 978  | 0   |
| 829 | 0 | 879 | 0 | 929 | 0 | 979  | 0   |
| 830 | 0 | 880 | 0 | 930 | 0 | 980  | 3   |
| 831 | 0 | 881 | 0 | 931 | 0 | 981  | 0   |
| 832 | 0 | 882 | 0 | 932 | 0 | 982  | 0   |
| 833 | 0 | 883 | 0 | 933 | 1 | 983  | 0   |
| 834 | 0 | 884 | 0 | 934 | 0 | 984  | 1   |
| 835 | 0 | 885 | 0 | 935 | 0 | 985  | 0   |
| 836 | 0 | 886 | 0 | 936 | 0 | 986  | 0   |
| 837 | 0 | 887 | 0 | 937 | 0 | 987  | 4   |
| 838 | 0 | 888 | 0 | 938 | 0 | 988  | 0   |
| 839 | 0 | 889 | 0 | 939 | 1 | 989  | 0   |
| 840 | 0 | 890 | 4 | 940 | 3 | 990  | 0   |
| 841 | 0 | 891 | 0 | 941 | 0 | 991  | 1   |
| 842 | 0 | 892 | 0 | 942 | 0 | 992  | 0   |
| 843 | 0 | 893 | 0 | 943 | 0 | 993  | 0   |
| 844 | 0 | 894 | 0 | 944 | 0 | 994  | 0   |
| 845 | 0 | 895 | 0 | 945 | 0 | 995  | 0   |
| 846 | 0 | 896 | 0 | 946 | 0 | 996  | 5   |
| 847 | 3 | 897 | 0 | 947 | 2 | 997  | 0   |
| 848 | 0 | 898 | 0 | 948 | 1 | 998  | 1   |
| 849 | 0 | 899 | 0 | 949 | 0 | 999  | 0   |
| 850 | 0 | 900 | 0 | 950 | 0 | 1000 | 0   |
|     |   |     |   |     |   |      | 300 |

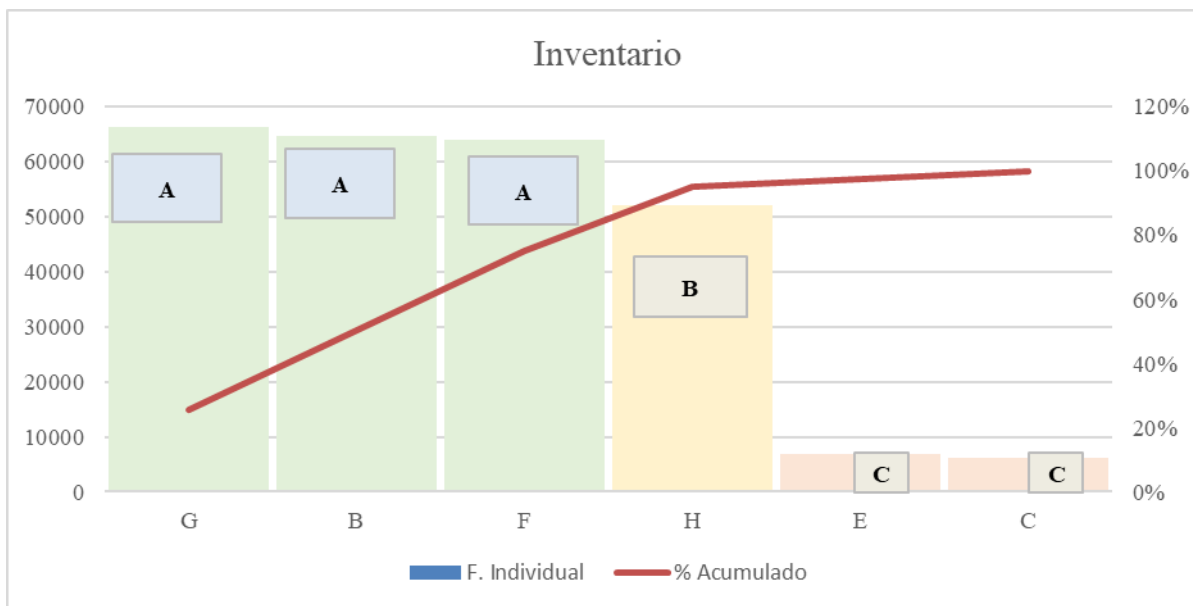
**GRÁFICO 7. INSPECCIÓN DE CALIDAD NO CONTROLADA.**



**TABLA 29. INVENTARIO MÉTODO ABC.**

| Cod   | Nombre                         | F. Individual | % individual | F. Acumulada | % Acumulado | Zona |
|-------|--------------------------------|---------------|--------------|--------------|-------------|------|
| 0-1   | C. pizza pequeña               | 66300         | 26%          | 66300        | 26%         | A    |
| 0-2   | C. pizza grande                | 64800         | 25%          | 131100       | 50%         | A    |
| 0-3   | C. pizza mediana               | 63900         | 25%          | 195000       | 75%         | A    |
| 0-4   | Materias primas                | 52000         | 20%          | 247000       | 95%         | B    |
| 0-5   | C. archivo con tapa            | 6900          | 3%           | 253900       | 98%         | C    |
| 0-6   | C. archivo sin tapa o estándar | 6100          | 2%           | 260000       | 100%        | C    |
| TOTAL |                                | 260000        | 100%         |              |             |      |

**GRÁFICO 8. INVENTARIO**



## ANEXO 5. COSTOS DE LA PROPUESTA

TABLA 30. NÓMINA DE EMPLEADOS ACTUAL

| <b>SALARIO EMPLEADOS</b>      |                        |                        |
|-------------------------------|------------------------|------------------------|
|                               | <b>SALARIO BASE 1</b>  | <b>SALARIO BASE 2</b>  |
| <b>Salario</b>                | <b>\$ 908.526,00</b>   | <b>\$ 1.362.789,00</b> |
| <b>Subsidio de transporte</b> | \$ 106.454,00          | \$ 106.454,00          |
| <b>Prima</b>                  | \$ 84.582,00           | \$ 122.437,00          |
| <b>Censatias</b>              | \$ 84.582,00           | \$ 122.437,00          |
| <b>Intereses de cesantias</b> | \$ 10.149,84           | \$ 14.692,44           |
| <b>vacaciones</b>             | \$ 52.967,07           | \$ 79.450,60           |
| <b>Pension</b>                | \$ 109.023,12          | \$ 163.534,68          |
| <b>ARL</b>                    | \$ 9.485,01            | \$ 14.227,52           |
| <b>Caja de Compensacion</b>   | \$ 36.341,04           | \$ 54.511,56           |
| <b>GASTO TOTAL MENSUAL</b>    | <b>\$ 1.402.110,08</b> | <b>\$ 2.040.533,80</b> |

| <b>NÚMERO DE EMPLEADOS</b> | <b>SALARIO BASE 1</b> | <b>6</b> |
|----------------------------|-----------------------|----------|
|                            | <b>SALARIO BASE 2</b> | <b>1</b> |
|                            |                       |          |

| <b>COSTOS ANUALES</b> |                |               |               |               |               |               |               |                   |                |                  |                  |                    |
|-----------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|----------------|------------------|------------------|--------------------|
| <b>ENERO</b>          | <b>FEBRERO</b> | <b>MARZO</b>  | <b>ABRIL</b>  | <b>MAYO</b>   | <b>JUNIO</b>  | <b>JULIO</b>  | <b>AGOSTO</b> | <b>SEPTIEMBRE</b> | <b>OCTUBRE</b> | <b>NOVIEMBRE</b> | <b>DICIEMBRE</b> | <b>GASTO TOTAL</b> |
| \$ 6.813.945          | \$ 6.813.945   | \$ 6.813.945  | \$ 6.813.945  | \$ 6.813.945  | \$ 6.813.945  | \$ 6.813.945  | \$ 6.813.945  | \$ 6.813.945      | \$ 6.813.945   | \$ 6.813.945     | \$ 6.813.945     | \$ 81.767.340      |
| \$ 745.178            | \$ 745.178     | \$ 745.178    | \$ 745.178    | \$ 745.178    | \$ 745.178    | \$ 745.178    | \$ 745.178    | \$ 745.178        | \$ 745.178     | \$ 745.178       | \$ 745.178       | \$ 8.942.136       |
| \$ 629.929            | \$ 629.929     | \$ 629.929    | \$ 629.929    | \$ 629.929    | \$ 629.929    | \$ 629.929    | \$ 629.929    | \$ 629.929        | \$ 629.929     | \$ 629.929       | \$ 629.929       | \$ 7.559.148       |
| \$ 629.929            | \$ 629.929     | \$ 629.929    | \$ 629.929    | \$ 629.929    | \$ 629.929    | \$ 629.929    | \$ 629.929    | \$ 629.929        | \$ 629.929     | \$ 629.929       | \$ 629.929       | \$ 7.559.148       |
| \$ 75.591             | \$ 75.591      | \$ 75.591     | \$ 75.591     | \$ 75.591     | \$ 75.591     | \$ 75.591     | \$ 75.591     | \$ 75.591         | \$ 75.591      | \$ 75.591        | \$ 75.591        | \$ 907.098         |
| \$ 397.253            | \$ 397.253     | \$ 397.253    | \$ 397.253    | \$ 397.253    | \$ 397.253    | \$ 397.253    | \$ 397.253    | \$ 397.253        | \$ 397.253     | \$ 397.253       | \$ 397.253       | \$ 4.767.036       |
| \$ 817.673            | \$ 817.673     | \$ 817.673    | \$ 817.673    | \$ 817.673    | \$ 817.673    | \$ 817.673    | \$ 817.673    | \$ 817.673        | \$ 817.673     | \$ 817.673       | \$ 817.673       | \$ 9.812.081       |
| \$ 71.138             | \$ 71.138      | \$ 71.138     | \$ 71.138     | \$ 71.138     | \$ 71.138     | \$ 71.138     | \$ 71.138     | \$ 71.138         | \$ 71.138      | \$ 71.138        | \$ 71.138        | \$ 853.651         |
| \$ 272.558            | \$ 272.558     | \$ 272.558    | \$ 272.558    | \$ 272.558    | \$ 272.558    | \$ 272.558    | \$ 272.558    | \$ 272.558        | \$ 272.558     | \$ 272.558       | \$ 272.558       | \$ 3.270.694       |
| \$ 10.453.194         | \$ 10.453.194  | \$ 10.453.194 | \$ 10.453.194 | \$ 10.453.194 | \$ 10.453.194 | \$ 10.453.194 | \$ 10.453.194 | \$ 10.453.194     | \$ 10.453.194  | \$ 10.453.194    | \$ 10.453.194    | \$ 125.438.331     |

TABLA 31. NÓMINA DE EMPLEADOS PROPUESTA

| SALARIO EMPLEADOS          |                        |                        |
|----------------------------|------------------------|------------------------|
|                            | SALARIO BASE 1         | SALARIO BASE 2         |
| Salario                    | \$ 908.526,00          | \$ 1.362.789,00        |
| Horas extras               | \$ 123.030             | \$ 184.544,34          |
| Subsidio de transporte     | \$ 106.454,00          | \$ 106.454,00          |
| Prima                      | \$ 94.834,00           | \$ 137.816,00          |
| Censatías                  | \$ 94.834,00           | \$ 137.816,00          |
| Intereses de cesantías     | \$ 11.380,08           | \$ 16.537,92           |
| vacaciones                 | \$ 52.967,07           | \$ 79.450,60           |
| Pension                    | \$ 123.786,67          | \$ 185.680,00          |
| ARL                        | \$ 10.769,44           | \$ 16.154,16           |
| Caja de Compensacion       | \$ 41.262,22           | \$ 61.893,33           |
| <b>GASTO TOTAL MENSUAL</b> | <b>\$ 1.567.843,04</b> | <b>\$ 2.289.135,36</b> |

| NÚMERO DE EMPLEADOS | SALARIO BASE 1 | 8 |
|---------------------|----------------|---|
|                     | SALARIO BASE 2 | 3 |

|                                    |                  |                  |
|------------------------------------|------------------|------------------|
| Valor hora                         | \$ 3.786         | \$ 5.678         |
| Hora extra diurna                  | \$ 4.732         | \$ 7.098         |
| Horas semanales                    | 26               | 26               |
| Costo total anual por horas extras | \$ 16.239.902,25 | \$ 24.359.853,38 |

| COSTOS ANUALES       |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                       |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|
| ENERO                | FEBRERO              | MARZO                | ABRIL                | MAYO                 | JUNIO                | JULIO                | AGOSTO               | SEPTIEMBRE           | OCTUBRE              | NOVIEMBRE            | DICEMBRE             | GASTO TOTAL           |
| \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 11.356.575        | \$ 136.278.900        |
| \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 1.537.870         | \$ 18.454.434         |
| \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 1.170.994         | \$ 14.051.928         |
| \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 14.065.440         |
| \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 1.172.120         | \$ 14.065.440         |
| \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 140.654           | \$ 1.687.853          |
| \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 662.088           | \$ 7.945.060          |
| \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 1.547.333         | \$ 18.568.000         |
| \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 134.618           | \$ 1.615.416          |
| \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 515.778           | \$ 6.189.333          |
| <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 19.410.150</b> | <b>\$ 232.921.805</b> |

TABLA 32. COSTOS DE INVENTARIOS PARA CAJA DE PIZZA PEQUEÑA

| Valor por lote caja pizza pequeña |  |          |                      |                      |                   |                          |                      |                     |
|-----------------------------------|--|----------|----------------------|----------------------|-------------------|--------------------------|----------------------|---------------------|
| Código                            | Descripción                              | Unid/Med | Cantidad Pedida/Lote | Costo Lote pedido    | Costo Unitario    | Cantidad necesaria/ Lote | Costo Lote necesario | Diferencia          |
| A                                 | Cajas de cartón                          | cm       | 14000                | \$ 5.292.000         | \$ 378            | 14000                    | \$ 5.292.000         |                     |
| B                                 | Láminas de cartón                        | m        | 2000                 | \$ 10.600.000        | \$ 5.300          | 1100                     | \$ 5.830.000         | \$ 4.770.000        |
| C                                 | Tinta                                    | ml       | 11625                | \$ 500.000           | \$ 500.000        | 11625                    | \$ 500.000           |                     |
| D                                 | Pegante                                  | ml       | 3875                 | \$ 279.550           | \$ 279.550        | 3875                     | \$ 279.550           |                     |
| E                                 | Cinta abrazadera Zuncho Eco Zp3 1/2 500m | m        | 196                  | \$ 28.700            | \$ 28.700         | 196                      | \$ 28.700            |                     |
| <b>TOTAL</b>                      |  |          |                      | <b>\$ 16.700.250</b> | <b>\$ 813.928</b> |                          | <b>\$ 11.930.250</b> | <b>\$ 4.770.000</b> |



TABLA 33. COSTOS DE INVENTARIOS PARA CAJA DE PIZZA GRANDE

| Valor por lote base caja pizza grande |  |          |                      |                      |                   |                          |                      |                     |
|---------------------------------------|--|----------|----------------------|----------------------|-------------------|--------------------------|----------------------|---------------------|
| Código                                | Descripción                              | Unid/Med | Cantidad pedida/Lote | Costo Lote           | Costo Unitario    | Cantidad necesaria/ Lote | Costo Lote necesario | Diferencia          |
| A                                     | Cajas de cartón                          | cm       | 14000                | \$ 15.862.000        | \$ 1.133          | 14000                    | \$ 15.862.000        |                     |
| B                                     | Láminas de cartón                        | m        | 5000                 | \$ 26.500.000        | \$ 5.300          | 4600                     | \$ 24.380.000        | \$ 2.120.000        |
| C                                     | Tinta                                    | ml       | 11625                | \$ 500.000           | \$ 500.000        | 11625                    | \$ 500.000           |                     |
| D                                     | Pegante                                  | ml       | 3875                 | \$ 279.550           | \$ 279.550        | 3875                     | \$ 279.550           |                     |
| E                                     | Cinta abrazadera Zuncho Eco Zp3 1/2 500m | m        | 196                  | \$ 28.700            | \$ 28.700         | 196                      | \$ 28.700            |                     |
| <b>TOTAL</b>                          |  |          |                      | <b>\$ 43.170.250</b> | <b>\$ 814.683</b> |                          | <b>\$ 41.050.250</b> | <b>\$ 2.120.000</b> |

TABLA 34. COSTOS DE INVENTARIOS PARA CAJA DE PIZZA MEDIANA

| Valor por lote base caja pizza mediana |  |          |                      |                      |                   |                          |                      |                     |
|--|--|----------|----------------------|----------------------|-------------------|--------------------------|----------------------|---------------------|
| Código                                 | Descripción                              | Unid/Med | Cantidad pedida/Lote | Costo Lote           | Costo Unitario    | Cantidad necesaria/ Lote | Costo Lote necesario | Diferencia          |
| A                                      | Cajas de cartón                          | cm       | 14000                | \$ 6.300.000         | \$ 450            | 14000                    | \$ 6.300.000         |                     |
| B                                      | Láminas de cartón                        | m        | 2000                 | \$ 10.600.000        | \$ 5.300          | 1500                     | \$ 7.950.000         | \$ 2.650.000        |
| C                                      | Tinta                                    | ml       | 11625                | \$ 500.000           | \$ 500.000        | 11625                    | \$ 500.000           |                     |
| D                                      | Pegante                                  | ml       | 3875                 | \$ 279.550           | \$ 279.550        | 3875                     | \$ 279.550           |                     |
| E                                      | Cinta abrazadera Zuncho Eco Zp3 1/2 500m | m        | 196                  | \$ 28.700            | \$ 28.700         | 196                      | \$ 28.700            |                     |
| <b>TOTAL</b>                           |  |          |                      | <b>\$ 17.708.250</b> | <b>\$ 814.000</b> |                          | <b>\$ 15.058.250</b> | <b>\$ 2.650.000</b> |

TABLA 35. COSTOS DE INVENTARIOS PARA CAJA DE ARCHIVO CON TAPA

| Valor por lote base caja archivo con tapa |  |          |                      |                     |                   |                          |                      |                     |
|---|--|----------|----------------------|---------------------|-------------------|--------------------------|----------------------|---------------------|
| Código                                    | Descripción                              | Unid/Med | Cantidad pedida/Lote | Costo Lote          | Costo Unitario    | Cantidad necesaria/ Lote | Costo Lote necesario | Diferencia          |
| A   | Cajas de cartón                          | cm       | 1000                 | \$ 2.000.000        | \$ 2.000          | 1000                     | \$ 2.000.000         |                     |
| B   | Láminas de cartón                        | m        | 1000                 | \$ 5.300.000        | \$ 5.300          | 700                      | \$ 3.710.000         | \$ 1.590.000        |
| C   | Tinta                                    | ml       | 11625                | \$ 500.000          | \$ 500.000        | 11625                    | \$ 500.000           |                     |
| D   | Pegante                                  | ml       | 3875                 | \$ 279.550          | \$ 279.550        | 3875                     | \$ 279.550           |                     |
| E   | Cinta abrazadera Zuncho Eco Zp3 1/2 500m | m        | 392                  | \$ 28.700           | \$ 28.700         | 392                      | \$ 28.700            |                     |
| <b>TOTAL</b>                              |  |          |                      | <b>\$ 8.108.250</b> | <b>\$ 815.550</b> |                          | <b>\$ 6.518.250</b>  | <b>\$ 1.590.000</b> |

TABLA 36. COSTOS DE INVENTARIOS PARA CAJA DE ARCHIVO ESTÁNDAR

| Valor por lote base caja archivo estándar |  |          |                      |                     |                   |                          |                      |                     |
|---|--|----------|----------------------|---------------------|-------------------|--------------------------|----------------------|---------------------|
| Código                                    | Descripción                              | Unid/Med | Cantidad pedida/Lote | Costo Lote          | Costo Unitario    | Cantidad necesaria/ Lote | Costo Lote necesario | Diferencia          |
| A   | Cajas de cartón                          | cm       | 1000                 | \$ 1.300.000        | \$ 1.300          | 1000                     | \$ 1.300.000         |                     |
| B   | Láminas de cartón                        | m        | 1000                 | \$ 5.300.000        | \$ 5.300          | 400                      | \$ 2.120.000         | \$ 3.180.000        |
| C   | Tinta                                    | ml       | 11625                | \$ 500.000          | \$ 500.000        | 11625                    | \$ 500.000           |                     |
| D   | Pegante                                  | ml       | 3875                 | \$ 279.550          | \$ 279.550        | 3875                     | \$ 279.550           |                     |
| E   | Cinta abrazadera Zuncho Eco Zp3 1/2 500m | m        | 196                  | \$ 28.700           | \$ 28.700         | 196                      | \$ 28.700            |                     |
| <b>TOTAL</b>                              |  |          |                      | <b>\$ 7.408.250</b> | <b>\$ 814.850</b> |                          | <b>\$ 4.228.250</b>  | <b>\$ 3.180.000</b> |

TABLA 37. COSTO DE INVENTARIOS DE LÁMINAS DE CARTÓN EN STOCK

|                 | Pedida        | Necesaria     | Diferencia    |
|-----------------|---------------|---------------|---------------|
| <b>Unidades</b> | 11000         | 8300          | 2700          |
| <b>Costos</b>   | \$ 58.300.000 | \$ 43.990.000 | \$ 14.310.000 |

TABLA 38. COSTO DE TROQUELADORA

| Depreciación por línea recta |                       |                        |                                |
|------------------------------|-----------------------|------------------------|--------------------------------|
| Año                          | Cuota de depreciación | Depreciación acumulada | Valor neto en libros contables |
| 1                            | \$ 6.000.000,00       | \$ 6.000.000,00        | \$ 54.000.000,00               |
| 2                            | \$ 6.000.000,00       | \$ 12.000.000,00       | \$ 48.000.000,00               |
| 3                            | \$ 6.000.000,00       | \$ 18.000.000,00       | \$ 42.000.000,00               |
| 4                            | \$ 6.000.000,00       | \$ 24.000.000,00       | \$ 36.000.000,00               |
| 5                            | \$ 6.000.000,00       | \$ 30.000.000,00       | \$ 30.000.000,00               |
| 6                            | \$ 6.000.000,00       | \$ 36.000.000,00       | \$ 24.000.000,00               |
| 7                            | \$ 6.000.000,00       | \$ 42.000.000,00       | \$ 18.000.000,00               |
| 8                            | \$ 6.000.000,00       | \$ 48.000.000,00       | \$ 12.000.000,00               |
| 9                            | \$ 6.000.000,00       | \$ 54.000.000,00       | \$ 6.000.000,00                |
| 10                           | \$ 6.000.000,00       | \$ 60.000.000,00       | -                              |

|                  |                  |
|------------------|------------------|
| Valor del activo | \$ 60.000.000,00 |
| Vida útil (años) | 10,00            |

## ANEXO 6. PERFILES DE CARGO

**TABLA 39. PERFIL DE CARGO INSPECTOR DE CALIDAD**

|  |                        |                       |            |   |
|--|------------------------|-----------------------|------------|---|
| <b>EMPRESA:</b>  | Ecoempaques Corrugados | <b>Mes</b>            | <b>Año</b> |   |
| <b>PUESTO:</b>   | Inspector de calidad   | 5                     | 2021       |   |
| <b>UBICACIÓN:</b>  | Bogotá D.C             |                       |            |   |
| <b>Área:</b>   | Producción             |                       |            |   |
| <b>Jefe Inmediato:</b>   | Jefe de producción     |                       |            |   |
| <b>OBJETIVO DEL CARGO</b>  |                        |                       |            |   |
| Identificar, promover e implementar de acuerdo con las políticas establecidas por la empresa, actividades de identificación y control de productos no conformes en los procesos productivos de las cajas de cartón de diseño personalizado, así como amplio conocimiento en métodos de control estadístico para resolución de los problemas encontrados. |                        |                       |            |   |
| <b>JUSTIFICACIÓN DEL CARGO</b>   |                        |                       |            |   |
| Este cargo fue diseñado para establecer el funcionamiento adecuado y el cuidado de los recursos producidos en la empresa, a través de estrategias de control, garantizando la calidad y cumplimiento de las especificaciones técnicas del cliente.   |                        |                       |            |   |
| <b>FUNCIONES DEL CARGO</b>   |                        |                       |            |   |
| Reportar al: Jefe inmediato  |                        | Empleados a cargo : 0 |            |   |
| Elaborar el plan de inspección y control de calidad acorde a los parámetros sugeridos y al proceso productivo de la empresa Ecoempaques Corrugados.  |                        |                       |            |   |
| Analizar la muestra de los productos no conformes.   |                        |                       |            |   |
| Examinar la materia prima adquirida para su posterior transformación.  |                        |                       |            |   |
| Evaluar el nivel de respuesta ante las quejas o reclamos presentados por parte de la empresa hacia los proveedores referente a los productos no conformes.   |                        |                       |            |   |
| Evaluar junto con el jefe de producción los posibles errores presentados en los productos para encontrar soluciones viables.   |                        |                       |            |   |
| Detallar todos los controles realizados en cada proceso productivo.  |                        |                       |            |   |
| Elaborar los informes necesarios para explicar los resultados obtenidos en las inspecciones y controles realizados.  |                        |                       |            |   |
| Aportar a I+D+i en la empresa para desarrollar alternativas que mitiguen los errores cometidos al momento de producir y que impactan directamente en el producto final.  |                        |                       |            |   |
| Cumplir con las normativas legales aplicables, así como la normativa interna en asuntos de competencia que incluyen: control interno, transparencia en la información, riesgo operacional, continuidad del negocio y comunicación a través de los sistemas de gestión.   |                        |                       |            |   |
| <b>CARACTERÍSTICAS DEL CARGO</b>   |                        |                       |            |   |
| Horario: Lunes - Sábado (8:00 a.m-5:00p.m.).   |                        |                       |            |   |
| Tipo de contrato: Termina indefinido.  |                        |                       |            |   |
| Salario: 1,5 SMLV.   |                        |                       |            |   |
| <b>REQUISITOS DEL CARGO</b>  |                        |                       |            |   |
| Formación académica: Ingeniero industrial o Técnico superior en análisis de control estadístico de la calidad.   |                        |                       |            |   |
| Otros conocimientos deseables: N/A   |                        |                       |            |   |
| Manejo de programa: Excel, Word, Power Point, etc.   |                        |                       |            |   |
| Años de experiencia en cargos de control de calidad : 2 años en el sector.   |                        |                       |            |   |
| <b>COMPETENCIAS GENERALES</b>  |                        |                       |            |   |
|  | <b>GRADO</b>           |                       |            |   |
|  | A                      | B                     | C          | D |
| Toma decisiones.   | X                      |                       |            |   |
| Comunicación asertiva.   | X                      |                       |            |   |
| Pensamiento estratégico.   | X                      |                       |            |   |
| Orientación y adaptación al cambio.  | X                      |                       |            |   |
| Orientación a resultados.  | X                      |                       |            |   |
| Relaciones interpersonales.  | X                      |                       |            |   |
| A= Alto B= Bueno C= Mínimo D= No desarrollada  |                        |                       |            |   |
| <b>COMPETENCIAS ESPECÍFICAS</b>  |                        |                       |            |   |
|  | <b>GRADOS</b>          |                       |            |   |
|  | A                      | B                     | C          | D |
| Habilidades para la estadística y los números.   | X                      |                       |            |   |
| Manejo de conflictos .   | X                      |                       |            |   |
| Destreza tecnológica.  |                        |                       |            |   |
| Negociación efectiva.  | X                      |                       |            |   |
| A= Alto B= Bueno C= Mínimo D= No desarrollada  |                        |                       |            |   |
| <b>RESPONSABILIDADES DEL CARGO</b>   |                        |                       |            |   |
| Informar y reportar a sus superiores.  |                        |                       |            |   |
| Informar y colaborar con sus pares.  |                        |                       |            |   |
| Supervisar los productos en los procesos finales .   |                        |                       |            |   |
| Controlar los procesos inestables ante el producto .   |                        |                       |            |   |

TABLA 40. PERFIL DE CARGO JEFE DE INVENTARIOS

|   |                        |                       |            |          |
|---|------------------------|-----------------------|------------|----------|
| <b>EMPRESA:</b>   | Ecoempaques Corrugados | <b>Mes</b>            | <b>Año</b> |          |
| <b>PUESTO:</b>  | Jefe de Inventarios    | 5                     | 2021       |          |
| <b>UBICACIÓN:</b>   | Bogotá D.C             |                       |            |          |
| Área:   | Producción             |                       |            |          |
| Jefe Inmediato:   | Jefe de producción     |                       |            |          |
| <b>OBJETIVO DEL CARGO</b>   |                        |                       |            |          |
| Supervisar e implementar de acuerdo con las políticas establecidas por la empresa, la clasificación de los productos y la respectiva materia prima en las diferentes áreas designadas para almacenamiento, catalogandolos jerárquicamente según la demanda, así como los niveles de producción. |                        |                       |            |          |
| <b>JUSTIFICACIÓN DEL CARGO</b>  |                        |                       |            |          |
| Este cargo fue diseñado para establecer el funcionamiento adecuado y el cuidado de los recursos prestados de la empresa, a través de la estrategia comercial, garantizando la confidencialidad y cumplimiento con las normativas legales.   |                        |                       |            |          |
| <b>FUNCIONES DEL CARGO</b>  |                        |                       |            |          |
| Reportar al : Jefe inmediato  |                        | Empleados a cargo : 0 |            |          |
| Monitorear en tiempo real el correcto seguimiento de unidades disponibles para transformación o venta en el almacén.  |                        |                       |            |          |
| Estipular los tiempos adecuados para supervisar los inventarios actuales de la empresa y tomar decisiones.  |                        |                       |            |          |
| Vigilar el uso adecuado de los recursos a través de los diferentes métodos y técnicas que se adecuen a la rotación o almacenamiento de los inventarios.   |                        |                       |            |          |
| Distribuir los espacios acorde al comportamiento de los inventarios, logrando su máxima optimización.   |                        |                       |            |          |
| Reducir los costos de almacenamiento y mantenimiento de la materia prima y producto terminado.  |                        |                       |            |          |
| Cumplir con las normativas legales aplicables, así como la normativa interna en asuntos de competencia que incluyen: control interno, transparencia en la información, riesgo operacional, continuidad del negocio y comunicación a través de los sistemas de gestión.                          |                        |                       |            |          |
| <b>CARACTERÍSTICAS DEL CARGO</b>  |                        |                       |            |          |
| Horario: Lunes - Sábado (8:00 a.m-5:00p.m.)   |                        |                       |            |          |
| Tipo de contrato: Terminó indefinido.   |                        |                       |            |          |
| Salario: 1,5 SMLV.  |                        |                       |            |          |
| <b>REQUISITOS DEL CARGO</b>   |                        |                       |            |          |
| Formación académica: Técnico o tecnólogo en carreras industriales o afines.   |                        |                       |            |          |
| Otros conocimientos deseables: Énfasis en Logística y recepción de inventarios.   |                        |                       |            |          |
| Manejo de programa: Excel, Word, Power Point, SAP etc.  |                        |                       |            |          |
| Años de experiencia en cargos de jefatura en inventarios: 2 años en el sector.  |                        |                       |            |          |
| <b>COMPETENCIAS GENERALES</b>   |                        |                       |            |          |
|   | <b>GRADO</b>           |                       |            |          |
|   | <b>A</b>               | <b>B</b>              | <b>C</b>   | <b>D</b> |
| Toma decisiones.  | X                      |                       |            |          |
| Liderazgo.  |                        | X                     |            |          |
| Pensamiento estratégico.  | X                      |                       |            |          |
| Orientación y adaptación.   | X                      |                       |            |          |
| Orientación a resultados.   | X                      |                       |            |          |
| Inteligencia Emocional.   | X                      |                       |            |          |
| A= Alto B= Bueno C=Minimo D= No desarrollada  |                        |                       |            |          |
| <b>COMPETENCIAS ESPECIFICAS</b>   |                        |                       |            |          |
|   | <b>GRADOS</b>          |                       |            |          |
|   | <b>A</b>               | <b>B</b>              | <b>C</b>   | <b>D</b> |
| Solvencia moral y ética.  | X                      |                       |            |          |
| Habilidades tecnológicas.   | X                      |                       |            |          |
| Capacidad de análisis.  | X                      |                       |            |          |
| A= Alto B= Bueno C=Minimo D= No desarrollada  |                        |                       |            |          |
| <b>RESPONSABILIDADES DEL CARGO</b>  |                        |                       |            |          |
| Informar a sus superiores.  |                        |                       |            |          |
| Colaborar con sus pares.  |                        |                       |            |          |
| Informar con precisión el comportamiento de los inventarios.  |                        |                       |            |          |

TABLA 41. PERFIL DE CARGO OPERARIO

|   |                        |                       |            |   |
|---|------------------------|-----------------------|------------|---|
| <b>EMPRESA:</b>   | Ecoempaques Corrugados | <b>Mes</b>            | <b>Año</b> |   |
| <b>PUESTO:</b>  | Operario               | 5                     | 2021       |   |
| <b>UBICACIÓN:</b>   | Bogotá D.C             |                       |            |   |
| Área:   | Producción             |                       |            |   |
| Jefe Inmediato:   | Jefe de producción     |                       |            |   |
| <b>OBJETIVO DEL CARGO</b>   |                        |                       |            |   |
| Colaborar con los distintos procesos productivos de la empresa, suministrando los materiales adecuados en cada proceso, cumpliendo con los requerimientos de cada jefe y nivelando su mano de obra en el puesto de trabajo en el que sea solicitado.                                |                        |                       |            |   |
| <b>JUSTIFICACIÓN DEL CARGO</b>  |                        |                       |            |   |
| Este cargo fue diseñado para dar solución ante los posibles embotellamientos y ser un apoyo ante la escasez de mano de obra y tiempos de fabricación, de esta forma se minimiza el riesgo al incumplimiento de los pedidos en las fechas ó cantidades estipuladas por los clientes. |                        |                       |            |   |
| <b>FUNCIONES DEL CARGO</b>  |                        |                       |            |   |
| Reportar al : Jefe de producción  |                        | Empleados a cargo : 0 |            |   |
| Apoyar todos los procesos de producción.  |                        |                       |            |   |
| Minimizar los tiempos de los pedidos.   |                        |                       |            |   |
| Surtir a tiempo la materia prima requerida en las máquinas de producción.   |                        |                       |            |   |
| Recibir y trasladar la materia prima y/o producto terminado al sitio de almacenamiento adecuado.  |                        |                       |            |   |
| Realizar labores de limpieza dentro de la planta.   |                        |                       |            |   |
| Tener flexibilidad y disposición para el cumplimiento o aprendizaje de diferentes tareas en los procesos de producción.   |                        |                       |            |   |
| Cumplir con las normativas legales aplicables, así como la normativa interna en asuntos de competencia que incluyen: transparencia en la información, riesgo operacional y comunicación a través de los sistemas de gestión.  |                        |                       |            |   |
| <b>CARACTERISTICAS DEL CARGO</b>  |                        |                       |            |   |
| Horario: Lunes - Sábado (8:00 a.m-5:00p.m.)   |                        |                       |            |   |
| Tipo de contrato: Terminó indefinido.   |                        |                       |            |   |
| Salario: 1 SMLV.  |                        |                       |            |   |
| <b>REQUISITOS DEL CARGO</b>   |                        |                       |            |   |
| Formación académica: Bachiller académico.   |                        |                       |            |   |
| Otros conocimientos deseables: N/A.   |                        |                       |            |   |
| Años de experiencia en el cargos: Sin experiencia.  |                        |                       |            |   |
| <b>COMPETENCIAS GENERALES</b>   |                        |                       |            |   |
|   | <b>GRADO</b>           |                       |            |   |
|   | A                      | B                     | C          | D |
| Capacidad de trabajo en equipo.   | X                      |                       |            |   |
| Liderazgo.  |                        |                       |            | X |
| Puntualidad.  | X                      |                       |            |   |
| Adaptación al cambio.   | X                      |                       |            |   |
| Utilización de equipos.   | X                      |                       |            |   |
| Capacidad de seguir órdenes e instrucciones.  | X                      |                       |            |   |
| A= Alto B= Bueno C=Minimo D= No desarrollada  |                        |                       |            |   |
| <b>COMPETENCIAS ESPECIFICAS</b>   |                        |                       |            |   |
|   | <b>GRADOS</b>          |                       |            |   |
|   | A                      | B                     | C          | D |
| Solvencia moral y ética.  | X                      |                       |            |   |
| Condición física.   | X                      |                       |            |   |
| Agilidad en trabajos varios.  | X                      |                       |            |   |
| A= Alto B= Bueno C=Minimo D= No desarrollada  |                        |                       |            |   |
| <b>RESPONSABILIDADES DEL CARGO</b>  |                        |                       |            |   |
| Reportar a sus superiores.  |                        |                       |            |   |
| Colaborar con sus pares.  |                        |                       |            |   |
| Cumplimiento de horarios.   |                        |                       |            |   |
| Apoyar todos los procesos y actividades.  |                        |                       |            |   |

TABLA 42. PERFIL DE CARGO OPERARIO DE TROQUEL

|   |                        |                       |            |          |
|---|------------------------|-----------------------|------------|----------|
| <b>EMPRESA:</b>   | Ecoempaques Corrugados | <b>Mes</b>            | <b>Año</b> |          |
| <b>PUESTO:</b>  | Operario               | 5                     | 2021       |          |
| <b>UBICACIÓN:</b>   | Bogotá D.C             |                       |            |          |
| Área:   | Producción             |                       |            |          |
| Jefe Inmediato:   | Jefe de producción     |                       |            |          |
| <b>OBJETIVO DEL CARGO</b>   |                        |                       |            |          |
| Colaborar con los distintos procesos productivos de la empresa, suministrando los materiales adecuados en cada proceso, cumpliendo con los requerimientos de cada jefe y nivelando su mano de obra en el puesto de trabajo en el que sea solicitado.                                |                        |                       |            |          |
| <b>JUSTIFICACIÓN DEL CARGO</b>  |                        |                       |            |          |
| Este cargo fue diseñado para dar solución ante los posibles embotellamientos y ser un apoyo ante la escasez de mano de obra y tiempos de fabricación, de esta forma se minimiza el riesgo al incumplimiento de los pedidos en las fechas ó cantidades estipuladas por los clientes. |                        |                       |            |          |
| <b>FUNCIONES DEL CARGO</b>  |                        |                       |            |          |
| Reportar al : Jefe de producción  |                        | Empleados a cargo : 0 |            |          |
| Apoyar todos los procesos de producción.  |                        |                       |            |          |
| Minimizar los tiempos de troquelación.  |                        |                       |            |          |
| Recibir a tiempo la materia prima requerida en la troqueladora.   |                        |                       |            |          |
| Realizar el montajes de las láminas de cartón en la máquina troqueladora.   |                        |                       |            |          |
| Efectuar la preparación y acondicionamiento de la máquina a su cargo.   |                        |                       |            |          |
| Mantener despejada el área de trabajo.  |                        |                       |            |          |
| Cumplir con las normativas legales aplicables, así como la normativa interna en asuntos de competencia que incluyen: transparencia en la información, riesgo operacional y comunicación a través de los sistemas de gestión.  |                        |                       |            |          |
| <b>CARACTERISTICAS DEL CARGO</b>  |                        |                       |            |          |
| Horario: Lunes - Sábado (8:00 a.m-5:00p.m.)   |                        |                       |            |          |
| Tipo de contrato: Termino indefinido.   |                        |                       |            |          |
| Salario: 1 SMLV.  |                        |                       |            |          |
| <b>REQUISITOS DEL CARGO</b>   |                        |                       |            |          |
| Formación académica: Bachiller académico.   |                        |                       |            |          |
| Otros conocimientos deseables: N/A.   |                        |                       |            |          |
| Años de experiencia en el cargo: 1 año en el manejo de troquel.   |                        |                       |            |          |
| <b>COMPETENCIAS GENERALES</b>   |                        |                       |            |          |
|   | <b>GRADO</b>           |                       |            |          |
|   | <b>A</b>               | <b>B</b>              | <b>C</b>   | <b>D</b> |
| Capacidad de trabajo en equipo.   | X                      |                       |            |          |
| Integridad.   |                        |                       |            | X        |
| Comunicación efectiva.  | X                      |                       |            |          |
| Polivalencia  | X                      |                       |            |          |
| Capacidad de seguir órdenes e instrucciones.  | X                      |                       |            |          |
| A= Alto B= Bueno C=Minimo D= No desarrollada  |                        |                       |            |          |
| <b>COMPETENCIAS ESPECIFICAS</b>   |                        |                       |            |          |
|   | <b>GRADOS</b>          |                       |            |          |
|   | <b>A</b>               | <b>B</b>              | <b>C</b>   | <b>D</b> |
| Conocimiento en procesos industriales.  | X                      |                       |            |          |
| Condición física.   | X                      |                       |            |          |
| Agilidad en trabajos varios.  | X                      |                       |            |          |
| A= Alto B= Bueno C=Minimo D= No desarrollada  |                        |                       |            |          |
| <b>RESPONSABILIDADES DEL CARGO</b>  |                        |                       |            |          |
| Reportar a sus superiores.  |                        |                       |            |          |
| Colaborar con sus pares.  |                        |                       |            |          |
| Cumplimiento de horarios.   |                        |                       |            |          |
| Aumentar la productividad en la máquina a su cargo.   |                        |                       |            |          |

ANEXO 7. ENCUESTAS

GRÁFICO 9. ¿LA EMPRESA HACE USO DE UN PLAN MAESTRO DE PRODUCCIÓN?

3 respuestas

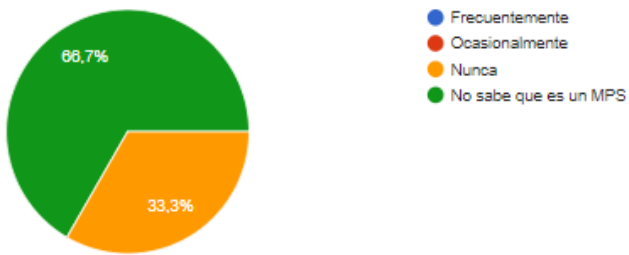


GRÁFICO 10. ¿EN LA EMPRESA SE MANEJAN PRONÓSTICOS DE VENTA?

3 respuestas

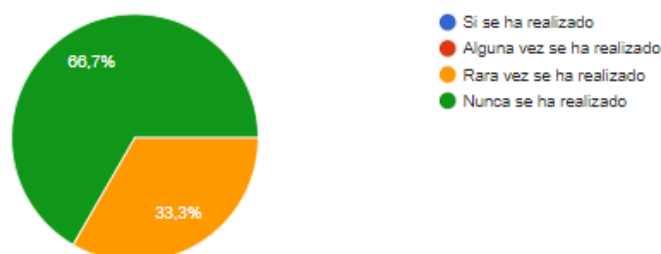


GRÁFICO 11. ¿LA EMPRESA MANEJA MÉTODOS DE REQUERIMIENTOS DE MATERIALES PARA LA PRODUCCIÓN (MRP)?

3 respuestas

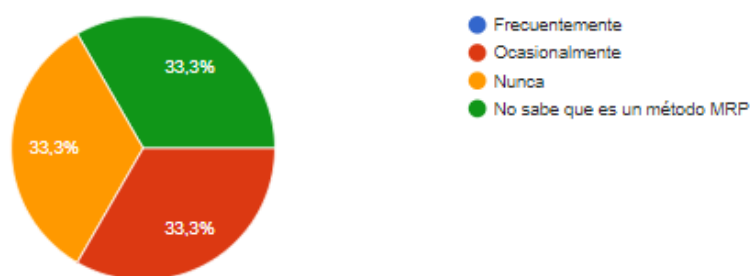
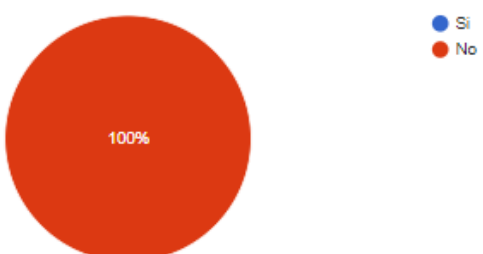


GRÁFICO 12. ¿CREE QUE LA EMPRESA MANEJA CORRECTAMENTE LOS INVENTARIOS?

3 respuestas



7.1 Si su respuesta en la pregunta 7 fue no, indique el porque

3 respuestas

- Hay demasiado material por diferentes partes de la bodega, sin tener señalado o especificado que es que
- No se lleva el control adecuado
- No hay inventarios en le empresa, por lo cual se pide de más o lo justo según los pedidos.

**GRÁFICO 13. ¿REALIZAN UN CONTROL A SUS PRODUCTOS TERMINADOS?**

3 respuestas

