

|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                  |
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|  <p>ALCALDÍA MAYOR<br/>DE BOGOTÁ D.C.</p> | <p><b>CONTRATO DE CONSULTORIA</b><br/><b>No. CO1.PCCNTR.3721668</b></p> <p>ELABORAR LOS ESTUDIOS, DISEÑOS, ACTUALIZACIÓN DE LEVANTAMIENTO DE PLANOS ARQUITECTÓNICOS, PRESUPUESTOS Y OBTENCIÓN DE LAS LICENCIAS DE CONSTRUCCIÓN PARA LAS OBRAS DE REFORZAMIENTO ESTRUCTURAL DE LAS PLAZAS DE MERCADO DISTRITALES DEL INSTITUTO PARA LA ECONOMÍA SOCIAL</p> |  <p><b>TÉCNICAS</b><br/><b>COLOMBIANAS DE</b><br/><b>INGENIERÍA S.A.S.</b></p> |
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# ANEXO C

## Resistencia del ensayo de penetración estándar

**RESISTENCIA DEL ENSAYO DE PENETRACIÓN ESTANDAR - ESTUDIOS, DISEÑOS, ACTUALIZACIÓN DE LEVANTAMIENTO DE PLANOS ARQUITECTÓNICOS, PRESUPUESTOS Y OBTENCIÓN DE LAS LICENCIAS DE CONSTRUCCIÓN PARA LAS OBRAS DE REFORZAMIENTO ESTRUCTURAL DE LAS PLAZAS DE MERCADO DISTRITALES DEL INSTITUTO PARA LA ECONOMÍA SOCIAL - PLAZA DE MERCADO SIETE DE AGOSTO**

| Sondeo | Muestra | Profundidad (m) |       |        | golpes/pie |    |    | N <sub>45</sub> | NF  | $\gamma$ SPT | $\gamma$ | $\sigma_v$<br>(Ton/m <sup>2</sup> ) | $\sigma_v'$<br>(Ton/m <sup>2</sup> ) | Rs   | Cn Seed-<br>Idriss | $\eta_1$ |       | Ncorr |       | $\Phi^*$ equiv |
|--------|---------|-----------------|-------|--------|------------|----|----|-----------------|-----|--------------|----------|-------------------------------------|--------------------------------------|------|--------------------|----------|-------|-------|-------|----------------|
|        |         | de              | a     | media  | 1          | 2  | 3  |                 |     |              |          |                                     |                                      |      |                    | USA      | Japón | USA   | Japón | Kishida        |
| S-1    | 1       | 0.80            | 1.25  | 1.025  | 3          | 3  | 3  | 6               | 0.8 | 1.600        | 1.600    | 1.64                                | 1.42                                 | 0.14 | 2.000              | 0.75     | 0.63  | 6     | 5     | 25.04          |
| S-1    | 2       | 1.90            | 2.35  | 2.125  | 1          | 1  | 2  | 3               | 0.8 | 1.600        | 1.600    | 3.40                                | 2.08                                 | 0.21 | 1.963              | 0.75     | 0.63  | 3     | 2     | 21.57          |
| S-1    | 3       | 2.90            | 3.40  | 3.150  |            |    |    |                 | 0.8 | 1.600        | 1.600    | 5.04                                | 2.69                                 | 0.27 | 1.804              | 0.75     | 0.63  |       |       |                |
| S-1    | 4       | 3.40            | 3.85  | 3.625  | 2          | 4  | 6  | 10              | 0.8 | 1.600        | 1.600    | 5.80                                | 2.98                                 | 0.30 | 1.742              | 0.75     | 0.63  | 9     | 7     | 27.00          |
| S-1    | 5       | 4.50            | 4.95  | 4.725  | 8          | 10 | 13 | 23              | 0.8 | 1.600        | 1.600    | 7.56                                | 3.64                                 | 0.36 | 1.620              | 0.75     | 0.63  | 19    | 17    | 33.20          |
| S-1    | 6       | 5.60            | 6.05  | 5.825  | 8          | 10 | 10 | 20              | 0.8 | 1.600        | 1.600    | 9.32                                | 4.30                                 | 0.43 | 1.518              | 0.75     | 0.63  | 16    | 13    | 31.10          |
| S-1    | 7       | 6.10            | 6.55  | 6.325  | 2          | 2  | 2  | 4               | 0.8 | 1.600        | 1.600    | 10.12                               | 4.60                                 | 0.46 | 1.476              | 0.75     | 0.63  | 3     | 2     | 21.57          |
| S-1    | 8       | 8.00            | 8.45  | 8.225  | 2          | 2  | 2  | 4               | 0.8 | 1.600        | 1.600    | 13.16                               | 5.74                                 | 0.57 | 1.340              | 0.75     | 0.63  | 3     | 2     | 21.57          |
| S-1    | 9       | 10.00           | 10.50 | 10.250 | 2          | 2  | 2  | 4               | 0.8 | 1.600        | 1.600    | 16.40                               | 6.95                                 | 0.70 | 1.223              | 0.75     | 0.63  | 2     | 2     | 21.57          |
| S-1    | 10      | 11.10           | 11.55 | 11.325 | 2          | 2  | 3  | 5               | 0.8 | 1.600        | 1.600    | 18.12                               | 7.60                                 | 0.76 | 1.168              | 0.75     | 0.63  | 3     | 2     | 21.57          |
| S-1    | 11      | 12.60           | 13.05 | 12.825 | 2          | 2  | 2  | 4               | 0.8 | 1.600        | 1.600    | 20.52                               | 8.50                                 | 0.85 | 1.100              | 0.75     | 0.63  | 2     | 1     | 20.37          |
| S-2    | 1       | 0.70            | 1.15  | 0.925  | 2          | 2  | 3  | 5               | 1.7 | 1.600        | 1.600    | 1.48                                | 1.48                                 | 0.15 | 2.000              | 0.75     | 0.63  | 5     | 4     | 24.30          |
| S-2    | 2       | 1.60            | 2.05  | 1.825  | 2          | 3  | 3  | 6               | 1.7 | 1.600        | 1.600    | 2.92                                | 2.80                                 | 0.28 | 1.781              | 0.75     | 0.63  | 6     | 4     | 24.30          |
| S-2    | 3       | 2.50            | 2.95  | 2.725  | 2          | 3  | 4  | 7               | 1.7 | 1.600        | 1.600    | 4.36                                | 3.34                                 | 0.33 | 1.672              | 0.75     | 0.63  | 6     | 5     | 25.04          |
| S-2    | 4       | 3.50            | 3.95  | 3.725  | 3          | 3  | 4  | 7               | 1.7 | 1.600        | 1.600    | 5.96                                | 3.94                                 | 0.39 | 1.571              | 0.75     | 0.63  | 6     | 4     | 24.30          |
| S-2    | 5       | 4.00            | 4.45  | 4.225  | 3          | 3  | 5  | 8               | 1.7 | 1.600        | 1.600    | 6.76                                | 4.24                                 | 0.42 | 1.526              | 0.75     | 0.63  | 6     | 5     | 25.04          |
| S-2    | 6       | 4.50            | 5.00  | 4.750  |            |    |    |                 | 1.7 | 1.600        | 1.600    | 7.60                                | 4.55                                 | 0.46 | 1.482              | 0.75     | 0.63  |       |       |                |
| S-2    | 7       | 5.00            | 5.45  | 5.225  | 5          | 7  | 15 | 22              | 1.7 | 1.600        | 1.600    | 8.36                                | 4.84                                 | 0.48 | 1.445              | 0.75     | 0.63  | 17    | 14    | 31.54          |
| S-2    | 8       | 5.80            | 6.45  | 6.125  | 7          | 10 | 13 | 23              | 1.7 | 1.600        | 1.600    | 9.80                                | 5.38                                 | 0.54 | 1.380              | 0.75     | 0.63  | 17    | 14    | 31.54          |
| S-3    | 1       | 0.70            | 1.15  | 0.925  | 2          | 4  | 6  | 10              | 1.8 | 1.600        | 1.600    | 1.48                                | 1.48                                 | 0.15 | 2.000              | 0.75     | 0.63  | 11    | 9     | 28.15          |
| S-3    | 2       | 1.70            | 2.15  | 1.925  | 2          | 2  | 2  | 4               | 1.8 | 1.600        | 1.600    | 3.08                                | 2.96                                 | 0.30 | 1.747              | 0.75     | 0.63  | 4     | 3     | 22.59          |

**RESISTENCIA DEL ENSAYO DE PENETRACIÓN ESTANDAR - ESTUDIOS, DISEÑOS, ACTUALIZACIÓN DE LEVANTAMIENTO DE PLANOS ARQUITECTÓNICOS, PRESUPUESTOS Y OBTENCIÓN DE LAS LICENCIAS DE CONSTRUCCIÓN PARA LAS OBRAS DE REFORZAMIENTO ESTRUCTURAL DE LAS PLAZAS DE MERCADO DISTRITALES DEL INSTITUTO PARA LA ECONOMÍA SOCIAL - PLAZA DE MERCADO SIETE DE AGOSTO**

| Sondeo | Muestra | Profundidad (m) |       |        | golpes/pie |    |    | N <sub>45</sub> | NF  | $\gamma$ SPT | $\gamma$ | $\sigma_v$<br>(Ton/m <sup>2</sup> ) | $\sigma_v'$<br>(Ton/m <sup>2</sup> ) | Rs   | Cn Seed-<br>Idriss | $\eta_1$ |       | Ncorr |       | $\Phi'$ equiv |
|--------|---------|-----------------|-------|--------|------------|----|----|-----------------|-----|--------------|----------|-------------------------------------|--------------------------------------|------|--------------------|----------|-------|-------|-------|---------------|
|        |         | de              | a     | media  | 1          | 2  | 3  |                 |     |              |          |                                     |                                      |      |                    | USA      | Japón | USA   | Japón | Kishida       |
| S-3    | 3       | 2.70            | 3.15  | 2.925  | 2          | 2  | 3  | 5               | 1.8 | 1.600        | 1.600    | 4.68                                | 3.56                                 | 0.36 | 1.633              | 0.75     | 0.63  | 4     | 4     | 23.49         |
| S-3    | 4       | 3.20            | 3.65  | 3.425  | 2          | 2  | 2  | 4               | 1.8 | 1.600        | 1.600    | 5.48                                | 3.86                                 | 0.39 | 1.584              | 0.75     | 0.63  | 3     | 2     | 21.57         |
| S-3    | 5       | 4.00            | 4.70  | 4.350  |            |    |    |                 | 1.8 | 1.600        | 1.600    | 6.96                                | 4.41                                 | 0.44 | 1.501              | 0.75     | 0.63  |       |       |               |
| S-3    | 6       | 4.70            | 5.15  | 4.925  | 3          | 4  | 8  | 12              | 1.8 | 1.600        | 1.600    | 7.88                                | 4.76                                 | 0.48 | 1.455              | 0.75     | 0.63  | 9     | 7     | 27.00         |
| S-3    | 7       | 5.80            | 6.25  | 6.025  | 5          | 5  | 7  | 12              | 1.8 | 1.600        | 1.600    | 9.64                                | 5.42                                 | 0.54 | 1.376              | 0.75     | 0.63  | 9     | 7     | 27.00         |
| S-3    | 8       | 6.30            | 6.75  | 6.525  | 8          | 4  | 3  | 7               | 1.8 | 1.600        | 1.600    | 10.44                               | 5.72                                 | 0.57 | 1.343              | 0.75     | 0.63  | 5     | 4     | 23.49         |
| S-4    | 1       | 0.60            | 1.05  | 0.825  | 3          | 3  | 2  | 5               | 0.8 | 1.600        | 1.600    | 1.32                                | 1.30                                 | 0.13 | 2.000              | 0.75     | 0.63  | 5     | 4     | 24.30         |
| S-4    | 2       | 1.60            | 2.05  | 1.825  | 2          | 2  | 2  | 4               | 0.8 | 1.600        | 1.600    | 2.92                                | 1.90                                 | 0.19 | 2.000              | 0.75     | 0.63  | 4     | 4     | 23.49         |
| S-4    | 3       | 2.60            | 3.05  | 2.825  | 1          | 1  | 2  | 3               | 0.8 | 1.600        | 1.600    | 4.52                                | 2.50                                 | 0.25 | 1.850              | 0.75     | 0.63  | 3     | 2     | 21.57         |
| S-4    | 4       | 3.70            | 4.10  | 3.900  |            |    |    |                 | 0.8 | 1.600        | 1.600    | 6.24                                | 3.14                                 | 0.31 | 1.709              | 0.75     | 0.63  |       |       |               |
| S-4    | 5       | 4.10            | 4.55  | 4.325  | 2          | 2  | 3  | 5               | 0.8 | 1.600        | 1.600    | 6.92                                | 3.40                                 | 0.34 | 1.662              | 0.75     | 0.63  | 4     | 4     | 23.49         |
| S-4    | 6       | 5.00            | 5.45  | 5.225  | 3          | 5  | 5  | 10              | 0.8 | 1.600        | 1.600    | 8.36                                | 3.94                                 | 0.39 | 1.571              | 0.75     | 0.63  | 8     | 6     | 26.38         |
| S-4    | 7       | 6.00            | 6.45  | 6.225  | 8          | 10 | 18 | 28              | 0.8 | 1.600        | 1.600    | 9.96                                | 4.54                                 | 0.45 | 1.484              | 0.75     | 0.63  | 22    | 18    | 33.97         |
| S-4    | 8       | 7.50            | 8.00  | 7.750  |            |    |    |                 | 0.8 | 1.600        | 1.600    | 12.40                               | 5.45                                 | 0.55 | 1.372              | 0.75     | 0.63  |       |       |               |
| S-4    | 9       | 8.00            | 8.45  | 8.225  | 3          | 2  | 2  | 4               | 0.8 | 1.600        | 1.600    | 13.16                               | 5.74                                 | 0.57 | 1.340              | 0.75     | 0.63  | 3     | 2     | 21.57         |
| S-4    | 10      | 9.50            | 10.00 | 9.750  |            |    |    |                 | 0.8 | 1.600        | 1.600    | 15.60                               | 6.65                                 | 0.67 | 1.250              | 0.75     | 0.63  |       |       |               |
| S-4    | 11      | 10.00           | 10.45 | 10.225 | 2          | 2  | 2  | 4               | 0.8 | 1.600        | 1.600    | 16.36                               | 6.94                                 | 0.69 | 1.224              | 0.75     | 0.63  | 2     | 2     | 21.57         |
| S-4    | 12      | 11.50           | 11.95 | 11.725 | 2          | 2  | 2  | 4               | 0.8 | 1.600        | 1.600    | 18.76                               | 7.84                                 | 0.78 | 1.149              | 0.75     | 0.63  | 2     | 1     | 20.37         |
| S-4    | 13      | 13.00           | 13.45 | 13.225 | 2          | 2  | 3  | 5               | 0.8 | 1.600        | 1.600    | 21.16                               | 8.74                                 | 0.87 | 1.083              | 0.75     | 0.63  | 3     | 2     | 21.57         |
| S-4    | 14      | 14.60           | 15.05 | 14.825 | 2          | 3  | 3  | 6               | 0.8 | 1.600        | 1.600    | 23.72                               | 9.70                                 | 0.97 | 1.019              | 0.75     | 0.63  | 3     | 2     | 21.57         |