**Ministry of Education**

**ትምህርትሚኒስቴር**

**Sector** Building Construction

**ዘርፍ:-ህንጻ ግንባታ**

**Occupation:** Bar Bending & Concreting **L-III**

**ሙያ:- ብረት አጠፋና አርማታስራ**

**Materials and Supplies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| 1 | Lime or cement | 29 | Kg | Any lime or cement |
| 2 | Sand | 0.04 | M3 | Any sand |
| 3 | Gravel (02) | 0.06 | M3 | Any gravel |
| 5 | Form work oil | 0.03 | Liter |  |
| 6 | Pencil | 1 | Pc |  |
| 7 | Nails # 6 mm | 0.25 | Kg |  |
| 8 | Nails # 5 mm | 0.25 | Kg |  |
| 9 | Plastic/Nylon string | 10 | m |  |
| 10 | Timber for form work | 4 | m | Local timber 2.5cm thick x30cm wide |
| 11 | Ø8 Reinforcement bars | 8 | m | Local Production |
|  | Ø10 Reinforcement bars | 6 | m | Local Production |
| 13 | Black wire | 3 | m |  |
| 16 | 6-10mm River stone\ Aggregates | 0.35 | M2 |  |

**Tools and Equipment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| 1 | Shovel | 1 | Pc |  |
| 2 | Try square | 1 | Pc |  |
| 3 | Trowel | 1 | Pc |  |
| 5 | Steel meter (3m) | 1 | Pc |  |
| 6 | Plumb bob | 1 | Pc |  |
| 7 | Claw hammer | 1 | Pc |  |
| 8 | Bow saw | 1 | Pc |  |
| 9 | Bucket | 1 | Pc |  |
| 10 | Batching box | 1 | Pc | 50X40X18 cm size |
| 11 | Hack saw | 1 | Pc |  |
| 12 | Spirit level | 1 | Pc | 40 cm long |
| 13 | Paint brush | 1 | Pc | 4X14 |
| 14 | Tong / pincher/pliers | 1 | Pc |  |
| 15 | Tamping rod | 1 | Pc | 30cm long, dia. 20 |
| 16 | Working Bench | 1 | Pc |  |
| 17 | Plate | 1 | Pcs | 20 x 20 x 0.6 cm |
| 18 | Bar bending rode (Bega) | 2 | Pcs | for Ǿ 8mm & Ǿ10mm bar |
| 19 | Straight edge(wooden or steel) | 1 | Pcs | 1.8 x 8 x 2.5 cm |
| 20 | Slump Cone | 1 | pcs | 200mm in diameter at the base, 100mm in diameter at the top and 300mm tall |

**Note:** Materials and tools may be modified by the Assessor, depending on the actual job performed, and location & the standard installation practices of the country.

**Materials and Supplies (consumable materials) Per Candidate**

**ለአንድተመዛኝየሚያስፈልጉአላቂእቃዎች**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| **ተ.ቁ** | **ዓይነት** | **መጠን** | **መለኪያ** | **መገለጫ** |
|  | Lime or cement | 60 | Kg | any lime or cement |
| ኖራወይምሲሚነቶ | ኪ.ግ | ማንኛውምሲሚንቶ/ኖራ |
|  | Sand | 0.04 | M3 | Fine River sand |
| አሸዋ | ሜትርኩብ | ደቃቅየወንዝአሸዋ |
|  | Gravel (02) | 0.07 | M3 | 02 well graded |
| ጠጠር | ሜትርኩብ | 02 ሚ.ሜውፍረትያለውበጥሩሁኔታየተፈጨጠጠር |
|  | 8mm Reinforcement bars (footing) | 12.0 | m | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት | ሜትር | የአገርውስጥምርት |
|  | 8mm Reinforcement bars (Column) | 13.4 | m | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት | ሜትር | የአገርውስጥምርት |
|  | 8mm reinforcement bars (for stirrup) | 2.4 | k.g | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት (ለማሰሪያ) | ኪ.ግ | የአገርውስጥምርት |
|  | Black wire 1.5mm | 8 | m | Soft and ductile annealed wire |
| የመዋቅር (የፌሮ) ብረትመሰሪያብረት | ሜትር | ለስላሳናተጣጣፊብረት |
|  | Timber 3.8x0.2m  3.8mx0.2ላ | 3.8mm | Meter  ሜትር | Australian timber  ላ |

**Tools and Equipment**

**የእጅመሳሪያዎች**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| **ተ.ቁ** | **ዓይነት** | **መጠን** | **መለኪያ** | **መገለጫ** |
|  | Shovel | 1 | Pc |  |
| አካፋ | ቁጥር |  |
|  | Try square | 1 | Pc |  |
| አንግልመለኪያ(ሰኳድራመለኪያ)) | ቁጥር |  |
|  | Trowel | 1 | Pc |  |
| ማንኪያ | ቁጥር |  |
|  | Float | 1 | Pc |  |
| መፋስ | ቁጥር |  |
|  | Steel Tape (3m) | 1 | Pc |  |
| ሜትር | ቁጥር |  |
|  | Plumb bob | 1 | Pc |  |
| ቱምቢ | ቁጥር |  |
|  | Claw hammer | 1 | Pc |  |
| የአናፂመዶሻ | ቁጥር |  |
|  | Bucket | 1 | Pc |  |
| ሸንኬሎ (ባልዲ) | ቁጥር |  |
|  | Batching box | 1 | Pc | 50X40X18 cm timber |
| መስፈሪያሳጥን | ቁጥር | 50 X 40 X 18 ሳ.ሜጣውላ |
|  | Hack saw | 1 | Pc |  |
| የብረትመጋዝ | ቁጥር |  |
|  | Spirit level (40 cm long) | 1 | Pc |  |
| የእጅውሃልክ | ቁጥር |  |
|  | Pliers (Pincher) | 1 | Pc |  |
| የፌራዩፒንሳ (ጉጠት) | ቁጥር |  |
|  | Broom | 1 | Pc |  |
| መጥረጊያ | ቁጥር |  |
|  | Bar bender (“Bega”) | 1 | pc | For 8mm Bar |
| የብረትማጠፊያ | ቁጥር | ለባለ 8ሚ.ሜብረት |
|  | Bar bending plate | 1 | pc | 0.6cm thick ,20 x 20 cm wide metal plate |
| የብረትማጠፊያምጣድ | ቁጥር | 0.6ሳ.ሜውፍረትእና, 20 x 20 ስፋትያለው |
|  | 380cm x 20cm x 2.5cm w00den form work for footing pad (It would be very economical and reusable if the form work could be adjustable) | 1 | Set | This form work is to be used by the candidate for filling concrete |
| 380ሳ.ሜ x 20ሳ.ሜ x 2.5ሳ.ሜየአርማታማቀፊያላ | ጥቅል/እስር | ለአርማታመሙያነትየሚያገለግል |

**Note:** Materials and tools may be modified by the Assessor, depending on the actual job performed, and location & the standard installation practices of the country.

**Materials and Supplies (consumable materials) Per Candidate**

**ለአንድተመዛኝየሚያስፈልጉአላቂእቃዎች**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| **ተ.ቁ** | **ዓይነት** | **መጠን** | **መለኪያ** | **መገለጫ** |
|  | Lime or cement | 60 | Kg | any lime or cement |
| ኖራወይምሲሚነቶ | ኪ.ግ | ማንኛውምሲሚንቶ/ኖራ |
|  | Sand | 0.04 | M3 | Fine River sand |
| አሸዋ | ሜትርኩብ | ደቃቅየወንዝአሸዋ |
|  | Gravel (02) | 0.07 | M3 | 02 well graded |
| ጠጠር | ሜትርኩብ | 02ሚ.ሜውፍረትያለውበጥሩሁኔታየተፈጨጠጠር |
|  | 8mm Reinforcement barfor g.beam | 13 | m | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት | ሜትር | የአገርውስጥምርት |
|  | 8mm Reinforcement bars (Column) | 4.4 | m | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት | ሜትር | የአገርውስጥምርት |
|  | 8mm reinforcement bars (for stirrup) | 1.55 | k.g | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት (ለማሰሪያ) | ኪ.ግ | የአገርውስጥምርት |
|  | Black wire 1.5mm | 8 | m | Soft and ductile annealed wire |
| የመዋቅር (የፌሮ) ብረትመሰሪያብረት | ሜትር | ለስላሳናተጣጣፊብረት |
|  | Timber 9.8x0.2mላ | 9.8 | Meter  ሜትር | Australian timber  ላ |

**Tools and Equipment**

**የእጅመሳሪያዎች**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| **ተ.ቁ** | **ዓይነት** | **መጠን** | **መለኪያ** | **መገለጫ** |
|  | Shovel | 1 | Pc |  |
| አካፋ | ቁጥር |  |
|  | Try square | 1 | Pc |  |
| አንግልመለኪያ(ሰኳድራመለኪያ)) | ቁጥር |  |
|  | Trowel | 1 | Pc |  |
| ማንኪያ | ቁጥር |  |
|  | Float | 1 | Pc |  |
| መፋስ | ቁጥር |  |
|  | Steel Tape (3m) | 1 | Pc | ‘ |
| ሜትር | ቁጥር | ‘ |
|  | Plumb bob | 1 | Pc | ‘ |
| ቱምቢ | ቁጥር | ‘ |
|  | Claw hammer | 1 | Pc | ‘ |
| የአናፂመዶሻ | ቁጥር |  |
|  | Bucket | 1 | Pc |  |
| ሸንኬሎ (ባልዲ) | ቁጥር |  |
|  | Batching box | 1 | Pc | 50X40X18 cm timber |
| መስፈሪያሳጥን | ቁጥር | 50 X 40 X 18 ሳ.ሜጣውላ |
|  | Hack saw | 1 | Pc |  |
| የብረትመጋዝ | ቁጥር |  |
|  | Spirit level (40 cm long) | 1 | Pc |  |
| የእጅውሃልክ | ቁጥር |  |
|  | Pliers (Pincher) | 1 | Pc |  |
| የፌራዩፒንሳ (ጉጠት) | ቁጥር |  |
|  | Broom | 1 | Pc |  |
| መጥረጊያ | ቁጥር |  |
|  | Bar bender (“Bega”) | 1 | pc | For 8mm Bar |
| የብረትማጠፊያ | ቁጥር | ለባለ 8ሚ.ሜብረት |
|  | Bar bending plate | 1 | pc | 0.6cm thick ,20 x 20 cm wide metal plate |
| የብረትማጠፊያምጣድ | ቁጥር | 0.6ሳ.ሜውፍረትእና, 20 x 20 ስፋትያለው |
|  | 980cm x20cm x2.5cm w00den form work for footings, beam and column (It would be very economical and reusable if the form work could be adjustable) | 1 | Set | This form work is to be used by the candidate for filling concrete |
| 980ሳ.ሜ x 20ሳ.ሜ x 2.5ሳ.ሜየአርማታማቀፊያላ | ጥቅል/እስር | ለአርማታመሙያነትየሚያገለግል |

**Note:** Materials and tools may be modified by the Assessor, depending on the actual job performed, and location & the standard installation practices of the country.

**Materials and Supplies (consumable materials) Per Candidate**

**ለአንድተመዛኝየሚያስፈልጉአላቂእቃዎች**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| **ተ.ቁ** | **ዓይነት** | **መጠን** | **መለኪያ** | **መገለጫ** |
|  | Lime or cement | 60 | Kg | any lime or cement |
| ኖራወይምሲሚነቶ | ኪ.ግ | ማንኛውምሲሚንቶ/ኖራ |
|  | Sand | 0.04 | M3 | Fine River sand |
| አሸዋ | ሜትርኩብ | ደቃቅየወንዝአሸዋ |
|  | Gravel (02) | 0.07 | M3 | 02 well graded |
| ጠጠር | ሜትርኩብ | 02ሚ.ሜውፍረትያለውበጥሩሁኔታየተፈጨጠጠር |
|  | 8mm Reinforcement barfor g.beam | 13 | m | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት | ሜትር | የአገርውስጥምርት |
|  | 8mm Reinforcement bars (Column) | 4.4 | m | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት | ሜትር | የአገርውስጥምርት |
|  | 8mm reinforcement bars (for stirrup) | 1.55 | k.g | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት (ለማሰሪያ) | ኪ.ግ | የአገርውስጥምርት |
|  | Black wire 1.5mm | 8 | m | Soft and ductile annealed wire |
| የመዋቅር (የፌሮ) ብረትመሰሪያብረት | ሜትር | ለስላሳናተጣጣፊብረት |
|  | Timber 9.8x0.2mላ | 9.8 | Meter  ሜትር | Australian timber  ላ |

**Tools and Equipment**

**የእጅመሳሪያዎች**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| **ተ.ቁ** | **ዓይነት** | **መጠን** | **መለኪያ** | **መገለጫ** |
|  | Shovel | 1 | Pc |  |
| አካፋ | ቁጥር |  |
|  | Try square | 1 | Pc |  |
| አንግልመለኪያ(ሰኳድራመለኪያ)) | ቁጥር |  |
|  | Trowel | 1 | Pc |  |
| ማንኪያ | ቁጥር |  |
|  | Float | 1 | Pc |  |
| መፋስ | ቁጥር |  |
|  | Steel Tape (3m) | 1 | Pc | ‘ |
| ሜትር | ቁጥር | ‘ |
|  | Plumb bob | 1 | Pc | ‘ |
| ቱምቢ | ቁጥር | ‘ |
|  | Claw hammer | 1 | Pc | ‘ |
| የአናፂመዶሻ | ቁጥር |  |
|  | Bucket | 1 | Pc |  |
| ሸንኬሎ (ባልዲ) | ቁጥር |  |
|  | Batching box | 1 | Pc | 50X40X18 cm timber |
| መስፈሪያሳጥን | ቁጥር | 50 X 40 X 18 ሳ.ሜጣውላ |
|  | Hack saw | 1 | Pc |  |
| የብረትመጋዝ | ቁጥር |  |
|  | Spirit level (40 cm long) | 1 | Pc |  |
| የእጅውሃልክ | ቁጥር |  |
|  | Pliers (Pincher) | 1 | Pc |  |
| የፌራዩፒንሳ (ጉጠት) | ቁጥር |  |
|  | Broom | 1 | Pc |  |
| መጥረጊያ | ቁጥር |  |
|  | Bar bender (“Bega”) | 1 | pc | For 8mm Bar |
| የብረትማጠፊያ | ቁጥር | ለባለ 8ሚ.ሜብረት |
|  | Bar bending plate | 1 | pc | 0.6cm thick ,20 x 20 cm wide metal plate |
| የብረትማጠፊያምጣድ | ቁጥር | 0.6ሳ.ሜውፍረትእና, 20 x 20 ስፋትያለው |
|  | 980cm x20cm x2.5cm w00den form work for footings, beam and column (It would be very economical and reusable if the form work could be adjustable) | 1 | Set | This form work is to be used by the candidate for filling concrete |
| 980ሳ.ሜ x 20ሳ.ሜ x 2.5ሳ.ሜየአርማታማቀፊያላ | ጥቅል/እስር | ለአርማታመሙያነትየሚያገለግል |

**Note:** Materials and tools may be modified by the Assessor, depending on the actual job performed, and location & the standard installation practices of the country.

Materials and Supplies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| 1 | Lime or cement | 29 | Kg | Any lime or cement |
| 2 | Sand | 0.02 | M3 | Any sand |
| 3 | Gravel (02) | 0.0 | M3 | Any gravel |
| 5 | Form work oil | 0.06 | Liter |  |
| 6 | Pencil | 1 | Pc |  |
| 7 | Nails # 6 mm | 0.25 | Kg |  |
| 8 | Nails # 5 mm | 0.25 | Kg |  |
| 9 | Plastic/Nylon string | 10 | M |  |
| 10 | Timber for form work | 4 | M | Local timber 2.5cm thick x20 cm wide |
| 11 | Ø8 Reinforcement bars | 8 | M | Local Production |
|  | Ø10 Reinforcement bars | 6 | M | Local Production |
| 13 | Black wire | 3 | M |  |

**Tools and Equipment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **o** | **Item** | **Qty** | **Unit** | **Specification** |
| 1 | Shovel | 1 | Pc |  |
| 2 | Try square | 1 | Pc |  |
| 3 | Trowel | 1 | Pc |  |
| 5 | Steel meter (3m) | 1 | Pc |  |
| 6 | Plumb bob | 1 | Pc |  |
| 7 | Claw hammer | 1 | Pc |  |
| 8 | Bow saw | 1 | Pc |  |
| 9 | Bucket | 1 | Pc |  |
| 10 | Batching box | 1 | Pc | 50X40X18 cm size |
| 11 | Hack saw | 1 | Pc |  |
| 12 | Spirit level | 1 | Pc | 40 cm long |
| 13 | Paint brush | 1 | Pc | 4X14 |
| 14 | Tong / pincher/pliers | 1 | Pc |  |
| 15 | Tamping rod | 1 | Pc | 30cm long, dia. 20 |
| 16 | Working Bench | 1 | Pc |  |
| 17 | Plate | 1 | Pcs | 20 x 20 x 0.6 cm |
| 18 | Bar bending rode (Bega) | 2 | Pcs | for Ǿ 8mm & Ǿ10mm bar |
| 19 | Straight edge(wooden or steel) | 1 | Pcs | 1.8 x 8 x 2.5 cm |
| 20 | Slump Cone | 1 | pcs | 200mm in diameter at the base, 100mm in diameter at the top and 300mm tall |

**Note:** Materials and tools may be modified by the Assessor, depending on the actual job performed, and location & the standard installation practices of the country.

**Materials and Supplies (consumable materials) Per Candidate**

**ለአንድተመዛኝየሚያስፈልጉአላቂእቃዎች**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Item | Qty | Unit | Specification |
| ተ.ቁ | ዓይነት | መጠን | መለኪያ | መገለጫ |
|  | Lime or cement | 50 | Kg | any lime or cement |
| ኖራወይምሲሚነቶ | ኪ.ግ | ማንኛውምሲሚንቶ/ኖራ |
|  | Sand | 0.04 | M3 | Fine River sand |
| አሸዋ | ሜትርኩብ | ደቃቅየወንዝአሸዋ |
|  | Gravel (02) | 0.07 | M3 | 02 well graded |
| ጠጠር | ሜትርኩብ | 02ሚ.ሜውፍረትያለውበጥሩሁኔታየተፈጨጠጠር |
|  | 8mm Reinforcement bars (footing) | 12.0 | m | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት | ሜትር | የአገርውስጥምርት |
|  | 8mm Reinforcement bars (Column) | 13.4 | m | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት | ሜትር | የአገርውስጥምርት |
|  | 6mm reinforcement bars (for stirrup) | 2.4 | k.g | Local production |
| ባለ 8ሚ.ሜየመዋቅር (የፌሮ) ብረት (ለማሰሪያ) | ኪ.ግ | የአገርውስጥምርት |
|  | Black wire 1.5mm | 8 | m | Soft and ductile annealed wire |
| የመዋቅር (የፌሮ) ብረትመሰሪያብረት | ሜትር | ለስላሳናተጣጣፊብረት |
|  | Timber 3.8x0.2m | 3.8 | Meter  ሜትር | Australian timber  ላ |

**Tools and Equipment**

**የእጅመሳሪያዎች**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Item | Qty | Unit | Specification |
| ተ.ቁ | ዓይነት | መጠን | መለኪያ | መገለጫ |
|  | Shovel | 1 | Pc |  |
| አካፋ | ቁጥር |  |
|  | Try square | 1 | Pc |  |
| አንግልመለኪያ(ሰኳድራመለኪያ)) | ቁጥር |  |
|  | Trowel | 1 | Pc |  |
| ማንኪያ | ቁጥር |  |
|  | Float | 1 | Pc |  |
| መፋስ | ቁጥር |  |
|  | Steel Tape (3m) | 1 | Pc |  |
| ሜትር | ቁጥር |  |
|  | Plumb bob | 1 | Pc |  |
| ቱምቢ | ቁጥር |  |
|  | Claw hammer | 1 | Pc |  |
| የአናፂመዶሻ | ቁጥር |  |
|  | Bucket | 1 | Pc |  |
| ሸንኬሎ (ባልዲ) | ቁጥር |  |
|  | Batching box | 1 | Pc | 50X40X18 cm timber |
| መስፈሪያሳጥን | ቁጥር | 50 X 40 X 18 ሳ.ሜጣውላ |
|  | Hack saw | 1 | Pc |  |
| የብረትመጋዝ | ቁጥር |  |
|  | Spirit level (40 cm long) | 1 | Pc |  |
| የእጅውሃልክ | ቁጥር |  |
|  | Pliers (Pincher) | 1 | Pc |  |
| የፌራዩፒንሳ (ጉጠት) | ቁጥር |  |
|  | Broom | 1 | Pc |  |
| መጥረጊያ | ቁጥር |  |
|  | Bar bender (“Bega”) | 1 | pc | For 8mm Bar |
| የብረትማጠፊያ | ቁጥር | ለባለ 8ሚ.ሜብረት |
|  | Bar bending plate | 1 | pc | 0.6cm thick ,20 x 20 cm wide metal plate |
| የብረትማጠፊያምጣድ | ቁጥር | 0.6ሳ.ሜውፍረትእና, 20 x 20 ስፋትያለው |
|  | 380cm x 20cm w00den form work for footing pad (It would be very economical and reusable if the form work could be adjustable) | 1 | Set | This form work is to be used by the candidate for filling concrete |
| 380cm(length) x 20ሳ.ሜየአርማታማቀፊያላ | ጥቅል/እስር | ለአርማታመሙያነትየሚያገለግል |

**Note:** Materials and tools may be modified by the Assessor, depending on the actual job performed, and location & the standard installation practices of the country.

**Materials and Supplies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| 1 | cement | 40.5 | Kg |  |
| 2 | Sand | 0.045 | M3 |  |
| 3 | Gravel (02) | 0.09 | M3 |  |
| 5 | Releasing agent | 0.015 | Liter |  |
| 6 | Pencil | 1 | Pc |  |
| 7 | Nails # 6 mm | 0.5 | kg |  |
| 8 | Nails # 5 mm | 0.5 | Kg |  |
| 10 | for form work lumber width 20cm | 2 | pc |  |
| 11 | Reinforcement bars diameter 8 cm | 71 | kg |  |
| 12 | Black wire | 1.5 | kg |  |

**Tools and Equipment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item Description** | **Qty** | **Unit** | **Specification** |
|  | Shovel | 1 | Pc |  |
|  | Try square | 1 | Pc |  |
|  | Trowel | 1 | Pc |  |
|  | Steel Tape | 1 | Pc |  |
|  | Plumb bob | 1 | Pc |  |
|  | Claw hammer | 1 | Pc |  |
|  | Bucket | 1 | Pc |  |
|  | Batching box (50X40X18 cm) | 1 | Pc |  |
|  | Hack saw | 1 | Pc |  |
|  | Spirit level | 1 | Pc |  |
|  | Plastic water hose(for water level) |  | m |  |
|  | Pliers (Pincher) | 1 | Pc |  |
|  | Bar bender bench with plat | 1 | Pc |  |
|  | Slump cone with tamping road | 1 | Pc | 30cm x20cm x 10cm |

**Note**:-Materials and tools may be modified by the Assessor, depending on the actual job performed, and location & the standard installation practices of the country

**Materials and Supplies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item** | **Qty** | **Unit** | **Specification** |
| 1 | cement | 40.5 | Kg |  |
| 2 | Sand | 0.045 | M3 |  |
| 3 | Gravel (02) | 0.09 | M3 |  |
| 5 | Form work oil | 0.015 | Liter |  |
| 6 | Pencil | 1 | Pc |  |
| 7 | Nails # 6 mm | 0.5 | kg |  |
| 8 | Nails # 5 mm | 0.5 | Kg |  |
| 10 | for form work lumber width 30cm | 2 | pcs |  |
| 10 | for form work lumber width 25cm | 2 | pcs |  |
| 11 | Reinforcement bars diameter 8 cm | 65 | kg |  |
| 12 | Reinforcement bars diameter 12 cm | 6 | kg |  |
| 13 | Black wire | 1.5 | kg |  |

**Tools and Equipment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Item Description** | **Qty** | **Unit** | **Specification** |
|  | Shovel | 1 | Pc |  |
|  | Try square | 1 | Pc |  |
|  | Trowel | 1 | Pc |  |
|  | Steel Tape | 1 | Pc |  |
|  | Plumb bob | 1 | Pc |  |
|  | Claw hammer | 1 | Pc |  |
|  | Bucket | 1 | Pc |  |
|  | Batching box (50X40X18 cm) | 1 | Pc |  |
|  | Hack saw | 1 | Pc |  |
|  | Spirit level | 1 | Pc |  |
|  | Plastic water hose(for water level) |  | m |  |
|  | Pliers (Pincher) | 1 | Pc |  |
|  | Bar bender bench with plat & Bega | 1 | Pc |  |
|  | Slump cone with road | 1 | Pc |  |

**Note:** Materials and tools may be modified by the Assessor, depending on the actual job performed, and location & the standard installation practices of the country.