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Department of Materials and Metallurgical Engineering (MME)  
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Client: Mr. Md. Golam Mowla  
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Konapara, Jatrabari  
Dhaka 1362

Client's Reference: Nil; Date 05/11/2019  
BRTC Reference: 1101-99456/MME/2019-20; Date 05/11/2019  
Sample Condition: Not Sealed

Date: 24 November 2019  
MME No: 0473(12)/2019-20

TEST OF DEFORMED M.S. REBAR (ASTM A615M-16)

| Frog Mark/<br>Description | Sample No. | Bar                             | Actual<br>Dia | Unit<br>Weight | Average<br>Unit<br>Weight | Yield<br>Load | Yield<br>Strength | Average Yield<br>Strength | Tensile<br>Load | Tensile<br>Strength | Average<br>Tensile<br>Strength | TS/YS<br>Ratio | Elongation |    | Bend Test<br>(Separate<br>Samples)<br>Remark |
|---------------------------|------------|---------------------------------|---------------|----------------|---------------------------|---------------|-------------------|---------------------------|-----------------|---------------------|--------------------------------|----------------|------------|----|--|
|                           |            | Designation<br>/ Nominal<br>Dia |               |                |                           |               |                   |                           |                 |                     |                                |                | mm         | mm |  |
| SSRM RB 400 10            | 1          | 10                              | 10.02         | 0.619          | 0.620                     | 35.80         | 456               | 459<br>(66500)            | 51.72           | 659                 | 661<br>(96000)                 | 1.45           | 16         | 17 | Satisfactory                                 |
|                           |            | 10                              | 10.05         | 0.623          |                           | 36.10         | 460               |                           | 52.23           | 665                 |                                | 1.45           | 17         |    | Satisfactory                                 |
|                           | 2          | 10                              | 10.01         | 0.617          | 36.20                     | 461           | 51.67             | 658                       | 1.43            | 18                  | Satisfactory                   |                |            |    |  |
|                           |            | 10                              | 10.01         | 0.617          | 36.20                     | 461           |                   |                           |                 |                     |                                |                |            |    |  |
|                           | 3          | 10                              | 10.01         | 0.617          | 36.20                     | 461           | 51.67             | 658                       | 1.43            | 18                  | Satisfactory                   |                |            |    |  |
|                           |            | 10                              | 10.01         | 0.617          | 36.20                     | 461           |                   |                           |                 |                     |                                |                |            |    |  |

\* TS/YS ratio is not required as per ASTM A615M.  
\* Strength values are calculated based on nominal area.

Weight Requirements for Steel Rebar (As Per ASTM A615/A615M-16 Table A1.1)

| Bar Designation Number/Nominal Dia, mm | 10    | 12    | 16    | 20    | 25    | 28    | 32    | 36    | 40    | 50     | 60     |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Nominal Weight, kg/m                   | 0.617 | 0.888 | 1.578 | 2.466 | 3.853 | 4.834 | 6.313 | 7.990 | 9.865 | 15.410 | 22.200 |

\* Measured unit weight shall not be less than 94% of the nominal weight.

Minimum Tensile Requirements for Steel Rebar (As Per ASTM A615/A615M-16 Table A1.2)

| Grade | ASTM A615                   |                               |       | ASTM A615M                  |                               |                   | Minimum Elongation in 8 in. (200 mm) Gauge Length, per cent |    |    |    |    |    |    |    |    |    |    |  |
|-------|-----------------------------|-------------------------------|-------|-----------------------------|-------------------------------|-------------------|---|----|----|----|----|----|----|----|----|----|----|--|
|       | Yield Strength<br>psi (MPa) | Tensile Strength<br>psi (MPa) | Grade | Yield Strength<br>MPa (psi) | Tensile Strength<br>MPa (psi) | Grade             | Bar Designation Number                                      |    |    |    |    |    |    |    |    |    |    |  |
| 40    | 40,000 (280)                | 60,000 (420)                  | 280   | 280 (40,000)                | 420 (60,000)                  | ASTM A615 (A615M) | 10  | 12 | 16 | 20 | 25 | 28 | 32 | 36 | 40 | 50 | 60 |  |
| 60    | 60,000 (420)                | 90,000 (620)                  | 420   | 420 (60,000)                | 620 (90,000)                  | ASTM A615 (A615M) | 11  | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |  |
| 75    | 75,000 (520)                | 100,000 (690)                 | 520   | 520 (75,000)                | 690 (100,000)                 | ASTM A615 (A615M) | 7   | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  |  |
| 80    | 80,000 (550)                | 105,000 (725)                 | 550   | 550 (80,000)                | 725 (105,000)                 | ASTM A615 (A615M) | 7   | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  |  |
| 100   | 100,000 (690)               | 145,000 (790)                 | 690   | 690 (100,000)               | 790 (115,000)                 | ASTM A615 (A615M) | 7   | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 7  |  |

*Falwida* 24.11.19

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