



STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

Ref: CED/TFL/01/34453

Dated: 09-01-2020

Dated of Test: 27-01-2020

To
Sr. Const. Engineer - VII
WASA, LDA.,
Lahore

Subject: - TESTING OF RPC (REINFORCED RECYCLED PLASTIC COMPOSITE MATERIAL) MANHOLE COVER

Reference to your letter no. CD-VII/175-177, Dated: 30/12/2019 on the above mentioned subject. One RPC (Reinforced Recycled Plastic Composite Material) Manhole Cover as received by us has been tested as requested by the client and results are given below.

Diameter of sample : **63.90 cm**
Diameter of loading plate : **55.20 cm**
Loading pattern : **Uniformly distributed load**
Failure Load : **42600 (kg)**

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples



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To,
 Project Coordinator
 Buch International Hospital Multan

Reference # CED/TFL **34534** (Dr. Qasim Khan)
 Reference of the request letter # BIH/BV/30/12/19/23

Dated: 23-01-2020
 Dated: 30-12-2019

Tension Test Report (Page -1/1)

Date of Test 27-01-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|-------------------|------------------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal (#) | Actual (inch) | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.415 | 3 | 0.394 | 0.11 | 0.122 | 3900 | 5100 | 78200 | 70470 | 102200 | 92200 | 1.10 | 13.8 | |
| 2 | 0.398 | 3 | 0.386 | 0.11 | 0.117 | 3900 | 5200 | 78200 | 73530 | 104200 | 98100 | 1.20 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,
M.E
AS Enterprises
Style Textile Raiwind Road
(AA Associates)(Afce)

Reference # CED/TFL **34537** (Dr. Qasim Khan)
Reference of the request letter # USD/ASE/18

Dated: 23-01-2020
Dated: 23-01-2020

Tension Test Report (Page -1/1)

Date of Test 27-01-2020
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (mm) | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|---------------------------|--------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal | Actual | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.399 | 10 | 9.81 | 0.12 | 0.117 | 3600 | 4700 | 66138 | 67740 | 86347 | 88500 | 1.10 | 13.8 | |
| 2 | 0.402 | 10 | 9.85 | 0.12 | 0.118 | 3700 | 4700 | 67975 | 69060 | 86347 | 87800 | 0.80 | 10.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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To,
 Sub Divisional Officer
 Highway Sub Division - 1
 Faisalabad
 (Re-Habilitation of RCC Road from Gate No. 2 to Gate No. 3 in front of Shop No. 1 to 40. In
 New Grain Market Dijkot Road Faisalabad Length = 1450 Rft)

Reference # CED/TFL **34539** (Dr. Qasim Khan)
 Reference of the request letter # 116/H

Dated: 24-01-2020
 Dated: 26-12-2019

Tension Test Report (Page -1/1)

Date of Test 27-01-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (inch) | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|-----------------------------|--------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal | Actual | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.387 | 3/8 | 0.380 | 0.11 | 0.114 | 3600 | 5300 | 72200 | 69840 | 106200 | 102900 | 1.00 | 12.5 | |
| 2 | 0.387 | 3/8 | 0.380 | 0.11 | 0.114 | 3400 | 5100 | 68200 | 65930 | 102200 | 98900 | 1.10 | 13.8 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| 3/8" Dia Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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To,
 Executive Engineer
 Jhelum Division UJC
 Jhelum
 (Repairing of Syphon RD. 64+600 of Upper Jhelum Canal)

Reference # CED/TFL **34542** (Dr. Qasim Khan)
 Reference of the request letter # 1049

Dated: 24-01-2020
 Dated: 23-01-2020

Tension Test Report (Page -1/1)

Date of Test 27-01-2020
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|-------------------|------------------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal (#) | Actual (inch) | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.380 | 3 | 0.377 | 0.11 | 0.112 | 4200 | 4900 | 84200 | 82950 | 98200 | 96800 | 1.20 | 15.0 | |
| 2 | 0.380 | 3 | 0.377 | 0.11 | 0.112 | 4200 | 4900 | 84200 | 82950 | 98200 | 96800 | 1.00 | 12.5 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| #3 Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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To,
M/S Rao Farman Ali Construction Company
Ferozpur Road, Lahore
(DOL - HP Capacity Enhancement Project (Descon Engineering Limited))

Reference # CED/TFL **34543** (Dr. Qasim Khan)
Reference of the request letter # Nil

Dated: 24-01-2020
Dated: 24-01-2020

Tension Test Report (Page -1/1)

Date of Test 27-01-2020
Gauge length 8 inches
Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

| Sr. No. | Weight (lbs/ft) | Diameter/ Size (mm) | | Area (in ²) | | Yield load (kg) | Breaking Load (kg) | Yield Stress (psi) | | Ultimate Stress (psi) | | Elongation (inch) | % Elongation | Remarks |
|--|--------------------|---------------------------|--------|----------------------------|--------|--------------------|--------------------------|-----------------------|--------|--------------------------|--------|----------------------|--------------|---------|
| | | Nominal | Actual | Nominal | Actual | | | Nominal | Actual | Nominal | Actual | | | |
| 1 | 0.369 | 10 | 9.43 | 0.12 | 0.108 | 3700 | 4850 | 67975 | 75290 | 89103 | 98700 | 1.10 | 13.8 | |
| 2 | 0.369 | 10 | 9.44 | 0.12 | 0.109 | 3600 | 4800 | 66138 | 73090 | 88184 | 97500 | 1.20 | 15.0 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Note: only two samples for tensile and one sample for bend test | | | | | | | | | | | | | | |
| Bend Test | | | | | | | | | | | | | | |
| 10mm Dia Bar Bend Test Through 180° is Satisfactory | | | | | | | | | | | | | | |
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To,
District Controller of Purchase/ (Inspection)
P. R. General Stores Moghalpura

Reference # CED/TFL **34545** (Dr. Qasam Khan)
Reference of the request letter # CSF/640/P/2019/R.S.

Dated: 24-01-2020

Dated: 21-01-2020

Tension Test Report (Page – 1/1)

Date of Test 27-01-2020
Gauge length 2 inches
Description M.S Sheet Steel Strip Tensile Test

| Sr. No. | Designation | Size of Strip | X Section Area | Yield load | Breaking Load | Yield Stress | Ultimate Stress | Elongation | % Elongation | Remarks |
|---|-------------|---------------|--------------------|------------|---------------|--------------|-----------------|------------|--------------|---------|
| | ----- | (mm) | (mm ²) | (kg) | (kg) | (MPa) | (MPa) | (in) | | |
| 1 | A | 30.40x1.5 | 45.60 | 1000 | 1460 | 215.13 | 314.09 | 0.80 | 40.00 | |
| 2 | B | 30.70x1.5 | 46.05 | 1040 | 1480 | 221.55 | 315.28 | 0.80 | 40.00 | |
| 3 | C | 30.40x1.5 | 45.60 | 1000 | 1460 | 215.13 | 314.09 | 0.80 | 40.00 | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| - | - | - | - | - | - | - | - | - | - | |
| Only Three Sample for Tensile Test | | | | | | | | | | |
| | | | | | | | | | | |
| Bend Test | | | | | | | | | | |
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