

## TESTING AVAILABLE AT CREAM MKRM

### TESTING BASED ON EQUIPMENT / PRODUCT TYPE

#### 100kN/ 1000kN/ 2000 kN UTM without Extensometer

6-40mm

#### 1000 kN UTM with Video Extensometer

6-40mm

#### CNC / Oxycutter Cutting (According to thickness)

1-4mm  
5-10mm  
11-15mm  
16-20mm  
20-25mm  
26-30mm  
31-34mm  
35-39mm  
40-44mm  
50-54mm  
55-59mm  
60-64mm  
65-69mm  
70-74mm  
75-79mm  
80mm

#### Bar bender & rebender

<20 mm  
>20 mm

#### Sample Preparation (Iron & Steel)

Hot mounting machine

#### Wire Mesh

Mesh-weld shear strength  
Wire mesh - dimension

#### Impact Test Machine

Impact test (Izod/Charpy) - 1 set (3 nos)

#### Chemical Element Analysis

Arc Spark Spectrometer with CRM (Bruker)  
Arc Spark Spectrometer with CRM (Spectro)  
ONH Analyzer

#### Coating

Coating thickness tester (magnetic method)  
Coating mass (gravimetric)

#### Hardness Tester

Brinell Hardness tester  
Rockwell Macrohardness tester  
Vickers Hardness Tester

#### Digital Microscope (100x)

Thickness of skin material  
Surface Geometry

#### Rebar Measuring System

Surface Geometry

#### Testing Based on Hourly Rate

Salt spray chamber (Weissttechnik)

#### Fatigue Test (5 million cycle)

##### 250 kN Hydraulic Fatigue Machine

##### 300 kN Hydraulic Fatigue Machine

< 16 mm  
20-39 mm

##### 500 kN Resonant Fatigue Machine

< 16 mm  
20 - 49 mm  
> 50 mm

#### Mechanical Splice Properties under low cycle reverse loading

12 - 49 mm

#### Adjustable Steel Prop

Load Test  
Pin Test & it's support  
Test on prevention againsts unintentional disengagement

#### Mass & Dimension of Steel

Rebar Mass Per unit length (per first 50kg/m)  
Rebar Mass Per unit area (per first 50kg/m<sup>2</sup>)  
Steel Dimension

Rebar Bonding Test

#### Hardened Concrete

Cube compression test - <50MPa

## TESTING AVAILABLE AT CREAM MKRM

### TESTING BASED ON EQUIPMENT / PRODUCT TYPE

Polisher / Grinder

#### Non Destructive Testing

Schmidt Rebound Hammer for Concrete

Schmidt Rebound Hammer for Concrete (Digital)

Ground Penetrating Radar for Concrete (depth 6 metre)

Ultrasonic Pulse Echo Wireless Imaging System for Concrete

Eddy Current Instrument for Steel Tube

Digital Ultra Sonic Flaw Detector for Steel

XRF Handheld Machine

#### Concrete Lab

Mould (Cube/Cylinder/Beam)

Concrete Mixer (248 L)

Concrete Mixer (100 L)

Sieve test

Slump Test Apparatus

Compacting Factor Apparatus

3000 kN Concrete Compression Machine

5000 kN Concrete Compression Machine

Oven / Furnace (24 hours)

#### Cement

Compressive strength of cement mortar cube

Sample preparation

UV Chamber (per set up to 20 samples)

Relaxation test

#### Brick/Block

Dimensions

i. Brick

ii. Block

Compressive strength

i. With capping

ii. Without capping

Water absorption

3-days immersion

Density

#### Concrete, Cement, Aggregate

##### Fresh concrete

Slump test

Compacting factor

Cube preparation

Cylinder/beam preparation

##### Aggregate

Sieve analysis

Water absorption and specific gravity

Cube compression test - >50MPa

Cube compression test with RFID

Cube density (as received)

Cylinder compression test

Beam flexural test - <450mm

Beam flexural test - >450mm

Cylinder tensile splitting test

Water absorption test

#### Coring of Concrete

Concrete coring through reinforced concrete

i. 50 mm diameter

ii. 100 mm diameter

iii. 150 mm diameter

Core specimen density

Compressive strength of core sample (trimmed & capped)

Compressive strength of core sample (without trimmed & capped)

#### Concrete NDI

Surface hardness (12 reading per set)

i. Rebound hammer

ii. Digital rebound hammer

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Scaffold (MS 1462)

Type of Test	Product Description
Dimension	vertical frame
Dimension	Cross Brace
Dimension	Horizontal Frame
Dimension	Adjustable Base plate / U-Head
Dimension	Catwalk / tread board
Dimension	Joint Pin
Dimension	Arm Lock
Dimension	Global Bracing
Dimension	side protection /Guard rail / Stairway
Dimension	Toe Board

Protection Annex A Coating/ Annex B Painted	
Coating thickness magnetic Method ( ISO 2178 ) or Gravimetric Method ( ISO 1461 )	
Test For Corrosion Resistance BS EN ISO 9227	Vertical Frame
Cross - Cut Test For Adhesion ISO 2409	Vertical Frame

<u>Component test</u>	
Vertical Deflection of Horizontal Tube	Vertical Frame
Compressive Strength of Vertical Tube	Vertical Frame
Compressive Strength	Cross Brace

<u>Coupler</u>	
Slipping force, $F_s$ +A15:EA15:E27	Right angle coupler (RA) A / AA
Failure force, $F_f$	

Type of Test	Product Description
<u>Component test</u>	
Deflection and Bending Test	Catwalk
Shearing Strength of Clamp/Hook	Catwalk
Proof Load Test	Adjustable Jack Base/ U-Head
Load Test on Cross Brace pins of a Vertical Frame	Vertical Frame Coupling pin
<u>Structure Test</u>	
Load Test 3 bay x 3 lift	1 system frame scaffold
Load Test 1 bay x 3 lift	1 system frame scaffold
<u>Tube scaffold and coupler</u>	
Chemical Test	Tube
Tensile Test	Tube
Straightness	Tube
Dimension, Mass & Tolerance	Tube
Flattening Test	Tube
Dimensional Insection Bare Tube	Tube
Coating Galvanizing EN 10240 Quality B2/ EN 1461 Table 2	Tube
Coating Painted/Coating EN ISO 2409 Table 1 tested ISO &253	Tube
Tensile	steel tubes (with nominal diameter 48.3mm)
Coating thickness	ledger, transom, standard, bracing

## TESTING AVAILABLE AT CREAM MKRM

Type of Test	Product Description
Pull apart force, $F_p$	Right angle coupler (RA) B / BB
Indentation	
Slipping force, $F_s$	
Failure force, $F_f$	
Pull apart force, $F_p$	
Indentation	
Slipping force, $F_s$	Swivel coupler (SW) A / B
Failure force, $F_f$	
Indentation	
Slipping force, $F_s$	Swivel coupler (SW) A / B
Failure force, $F_f$	
Indentation	
Slipping force, $F_s$	Sleeve coupler A
Slipping force, $F_s$	Sleeve coupler B

<u>Modular Scaffold</u>	
Dimension	Stairways
Dimension	Headroom and system width
Chemical	Steel tube
Tensile	steel tubes (other than 48.3 diameter mm)
Dimension	steel tubes (other than 48.3 diameter mm) * used same sample as tensile test
Dimension	steel tubes (with nominal diameter 48.3mm) ledger, transom, standard, bracing *used same sample as tensile test

Type of Test	Product Description
<u>Structure &amp; Component Test</u>	
Load Test	Jack Base
Load Test	U Head
Load Test	Stairways
Downward Loading	Side Protection
Horizontal Loading	Side Protection
Upward Loading	Side Protection
Concentrated Load (500x500)	Platform
Concentrated Load (200x200)	Platform
Uniformly Distributed Load	Platform
Drop Test (Shear)	Platform And Their Supports
Drop Test (Moment)	Platform And Their Supports
Elastic Buckling Load Factor	Typical 3x3 System
<u>Shoring System</u>	
Tensile	Steel Tube
Chemical	Steel Tube
Global Test	Low Tower
Global Test	High Tower
Load Test	Jack Base
Load Test	U Head