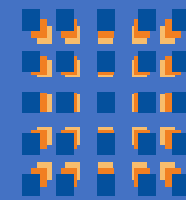


Fire Risk in High Rise Buildings

*Srilanka
29.01.2019*

A PRESENTATION BY

RAMCO



HILUX

CALCIUM SILICATE Dry Walls & Ceilings

**FACTS : FALLING DEBRIS HAS PROVED TO BE MORE
FATAL THAN THE FIRE ITSELF !!!**

Grenfell Tower, London

The rapid spread of the fire has been attributed to the building's exterior cladding, a type in widespread use

Zen Tower, Dubai

FACTS : Aluminum composite panels used in External cladding, is proven to aid spread of fire !!!

Dubai property regulator has renewed calls for developers and owners to work together to identify towers where combustible aluminum cladding must be changed and outlined details about a new safety drive to replace the facades.





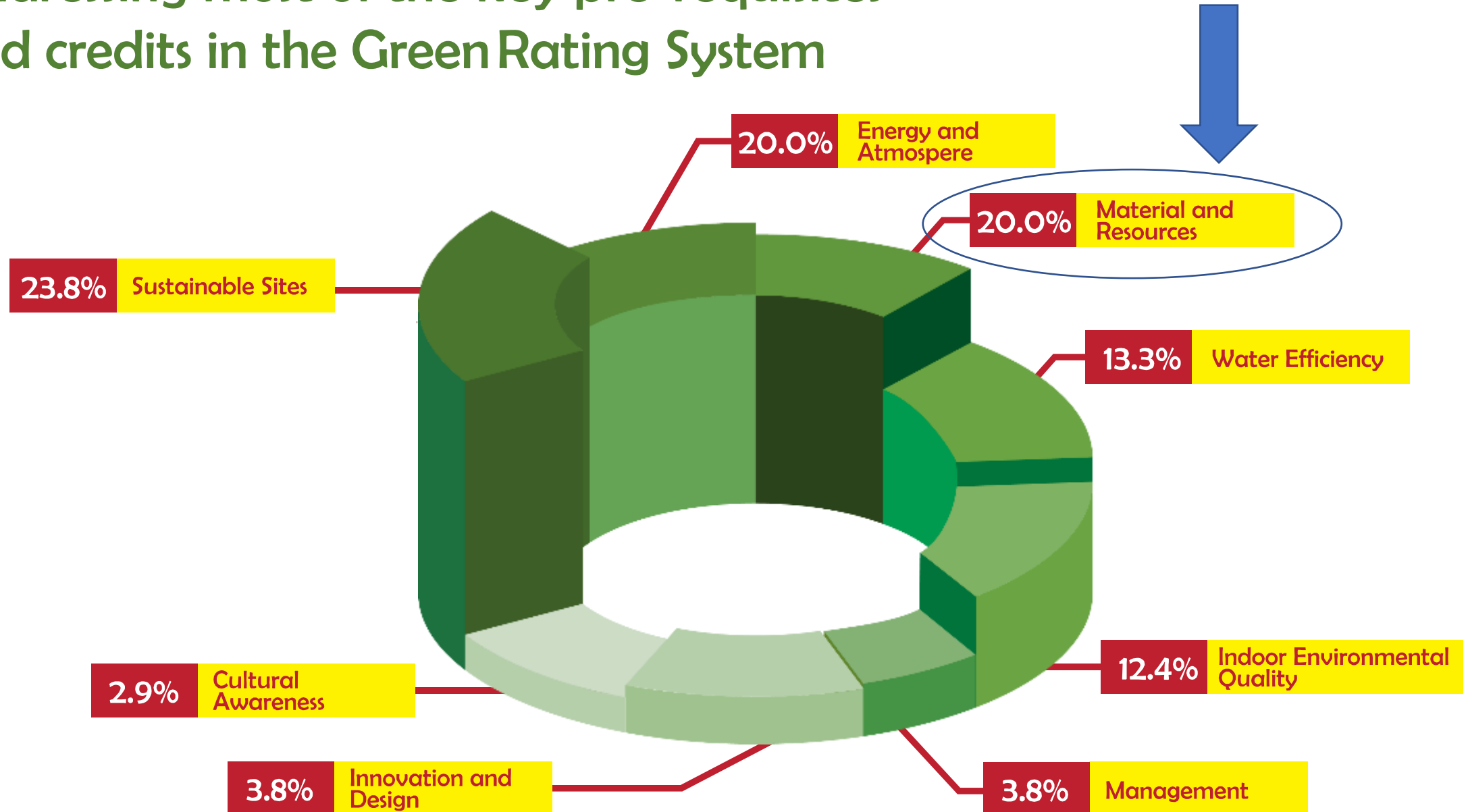
Kamala Mills, Mumbai

HILUX
CALCIUM SILICATE Dry Walls & Ceilings

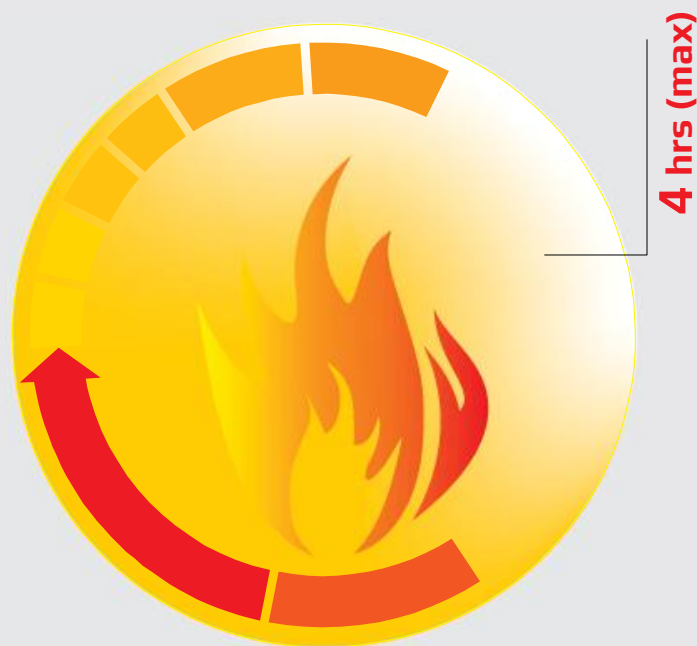
**Facts :Adequate fire doors to be provided
in buildings to improve escape & reduce casualty !!!**

Mumbai Fire Brigade's deputy chief fire officer R. Chaudhary said both establishments did not have emergency exits,

Addressing most of the key pre-requisites and credits in the Green Rating System



4 Parameters to focus, while Designing fire rated systems



Fire Rating (System)

Combustibility

Non-combustible according to
(BS 476:Part 4-1970)

Surface spread of flame

Class - 1 as per
(BS 476:Part 7-1997)

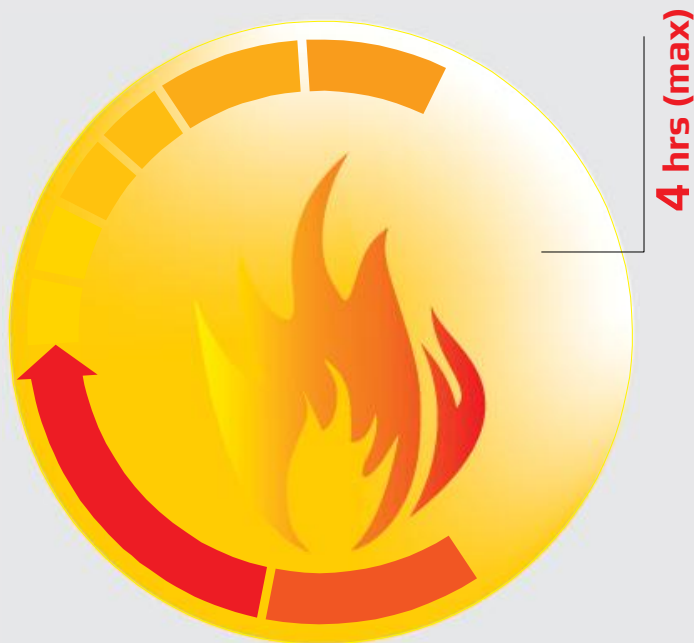
Fire Propagation

Fire propagation index $I = 1.2$ as per
(BS 476:Part 6-1989+A1:2009)

Ignitability

Class 'P' not easily ignitable as per
(BS 476:Part 5-1979)

3 Critical functions of a fire rated system



Fire Rating (System)

Integrity

withstand and prevent fire as well as smoke from breaching the buildings compartmentation

Stability

partitions or barriers which have been designed specifically to provide compartmentation between rooms

Insulation

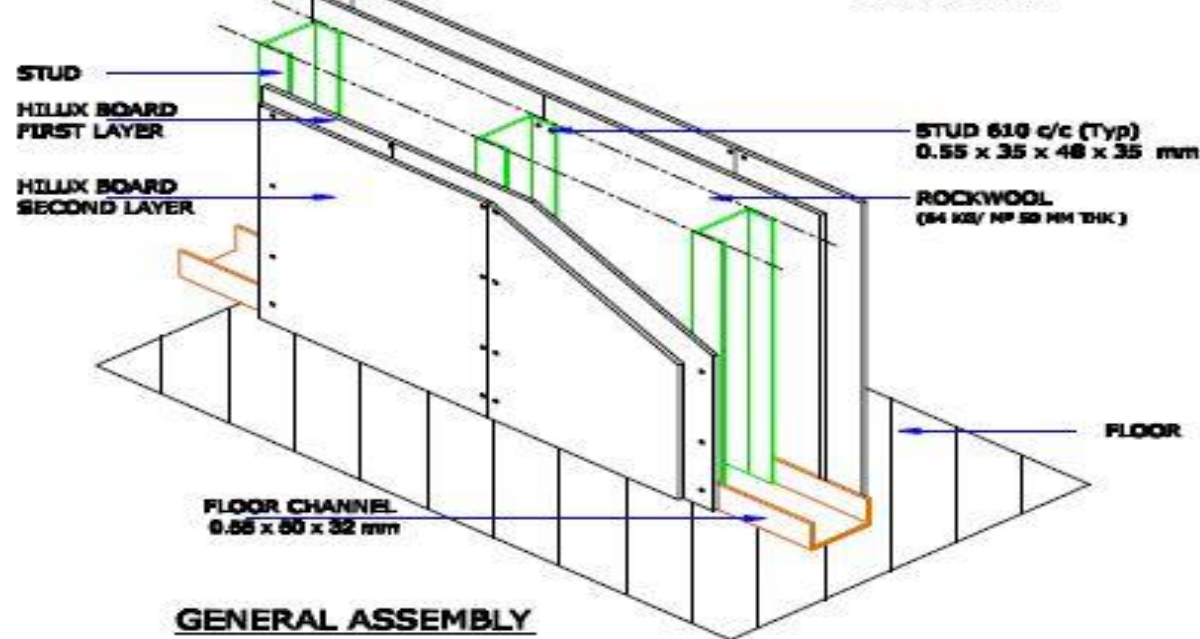
withstand the heat generated from a fire and prevent it from breaching the buildings compartmentation

CHOICE OF A RELIABLE & INTERGRATED SOLUTIONS PROVIDER

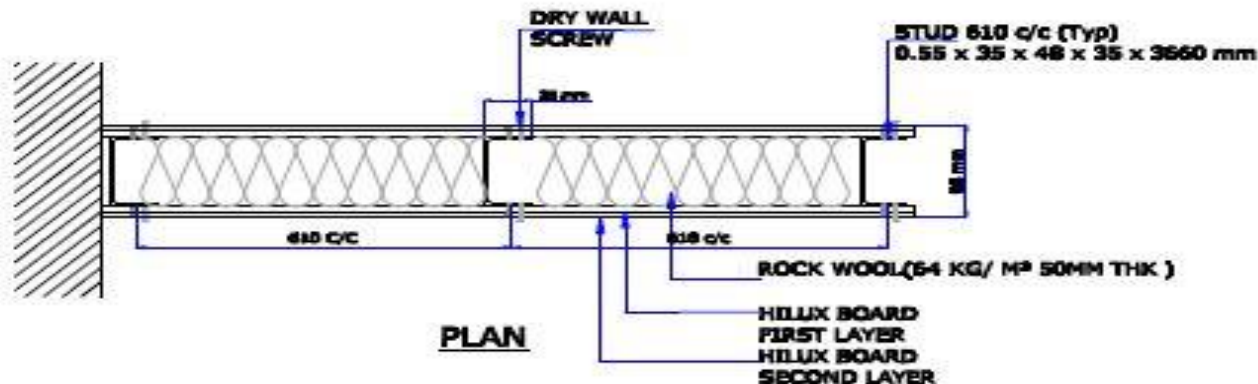
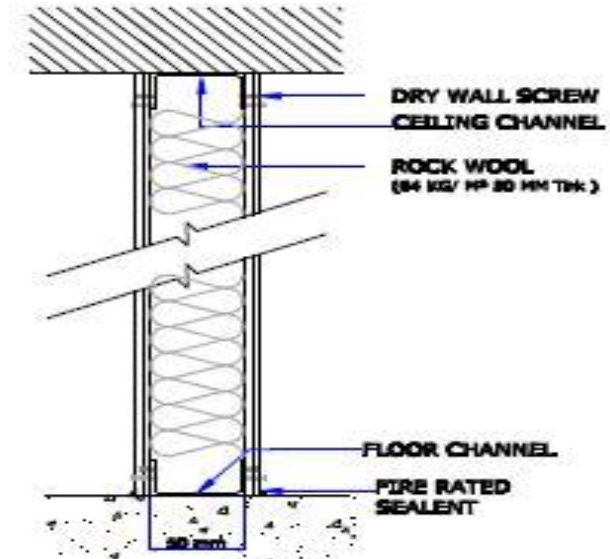
120 Min Fire Resistant Partition Assembly

FIRE RATED DOUBLE LAYER PARTITIONS

98 mm Thick wall



GENERAL ASSEMBLY



TECHNICAL SPECIFICATION

BOARD	- Hilux 1830x1220x12 MM Thk
Make	- Ramco HILUX
Partitions Type	- Double Layer Fire Rated
Rock Wool	- 64 Kg/M³, 50 mmThk
Test Duration	- 120 Min +

Ramco Industries Limited



Design	nika	Checked	nika
Drawn	nika	Approved	raj

Title:-

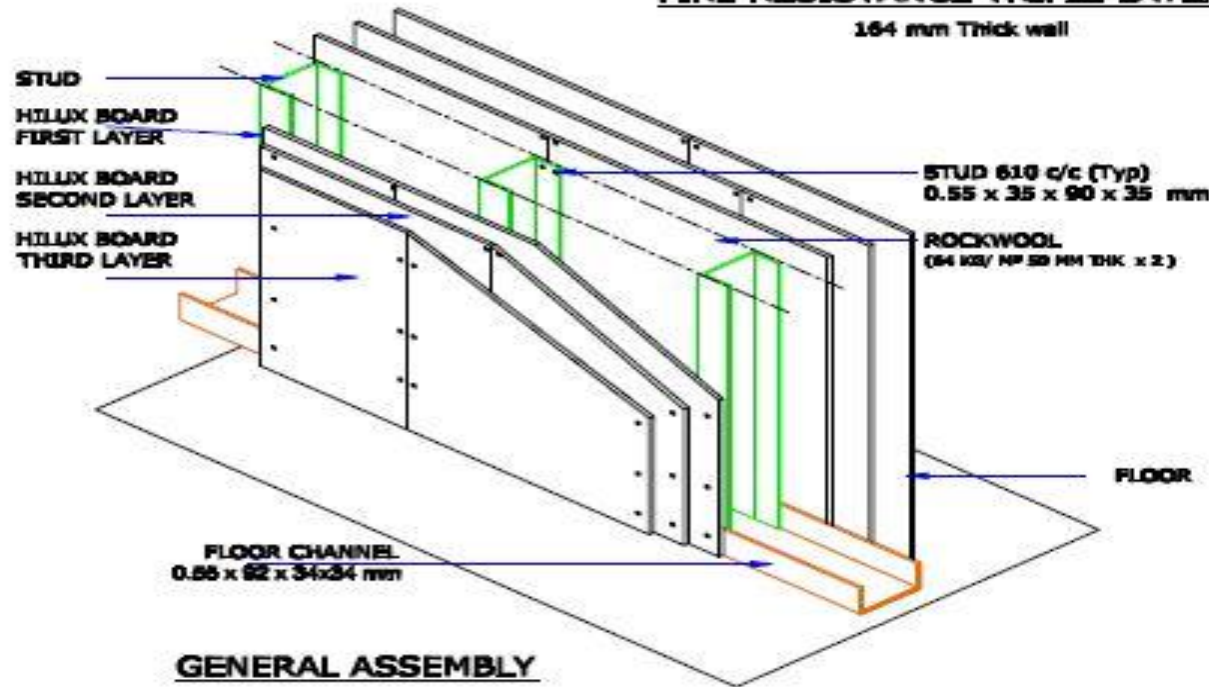
FIRE RESISTANCE PARTITION

Dwg No: RIL-Boards-Partitions-C-001 Sheet 1 of 2

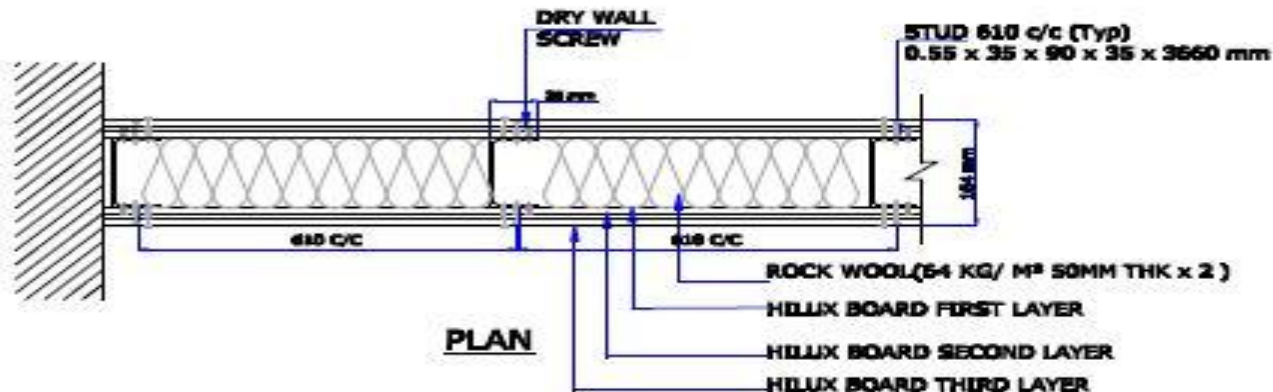
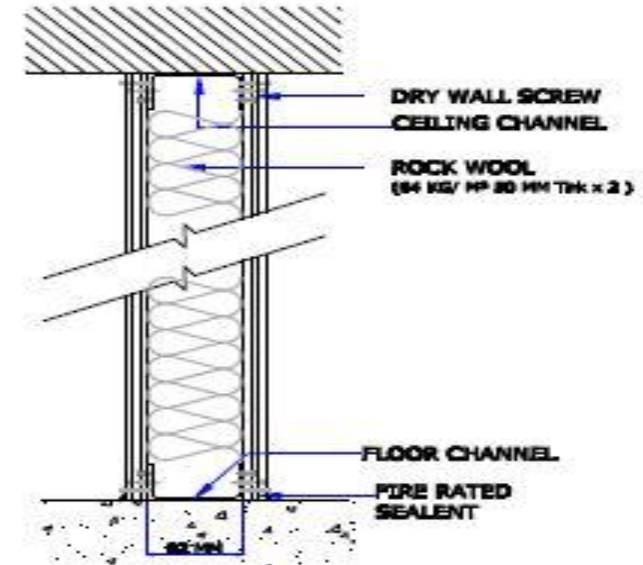
240 Min Fire Resistant Partition Assembly

FIRE RESISTANCE TRIPLE LAYER PARTITION

164 mm Thick wall



GENERAL ASSEMBLY



TECHNICAL SPECIFICATION

BOARD	-	Hilux 1830x1220x12 MM Thk
Make	-	Ramco HILUX
Partitions Type	-	Triple Layer Fire Rated
Rock Wool	-	64 Kg/M³ , 50 mmThk x 2
Test Duration	-	240 Min +

Ramco Industries Limited



Design	nka	Checked	nka
Drawn	nka	Approved	raj

Title:-

FIRE RESISTANCE PARTITION

Dwg No: RIL-Boards-Partitions-C-001 Sheet 1 of 2



Vertical Structures

Hybrid Spaces



Integrated Townships

Multi Occupier Groups

Sri Lanka is witnessing
unprecedented growth
and expanding vertically





ALTAIR

Sri Lanka's tallest
habitable structure
(63 level, 240 meters height)

Our boards
make
Altair
completely
fire safe.

Contract
1.0 Mln Sq. Ft of Drywall & false Ceiling
Fire Lining in MEP shaft
Lift Shafts



Altair Project- Dry Wall & False Ceiling



Framing Work



Single Layer Single side Board Work



Both side completed Boarding Work

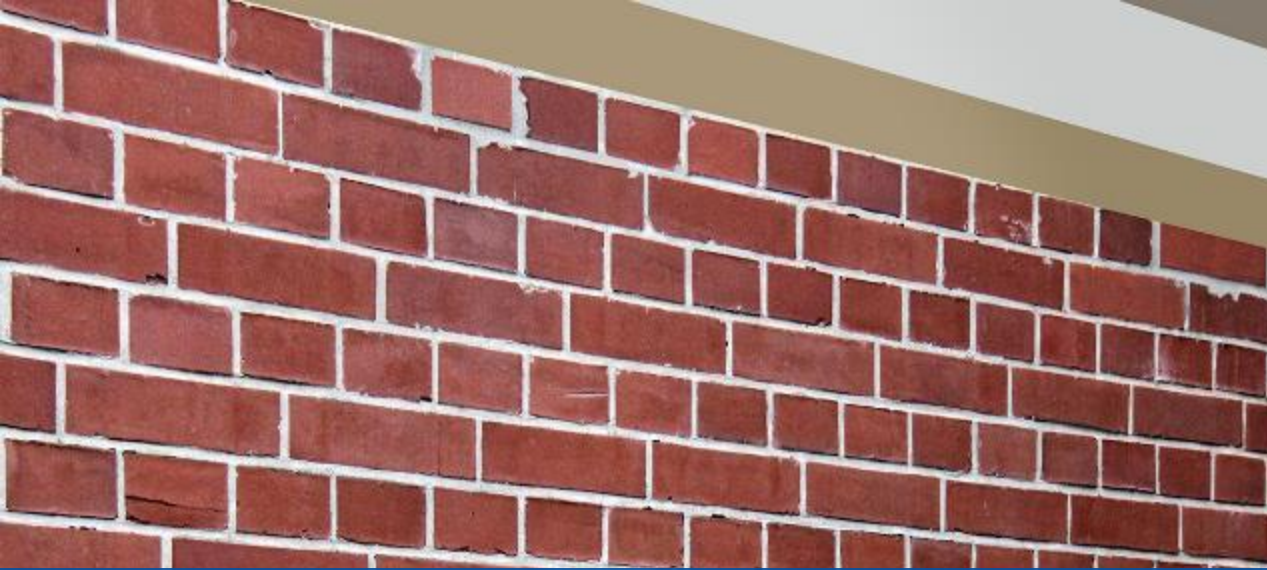


Jointing Completed Partition Work



Finished Partition Work





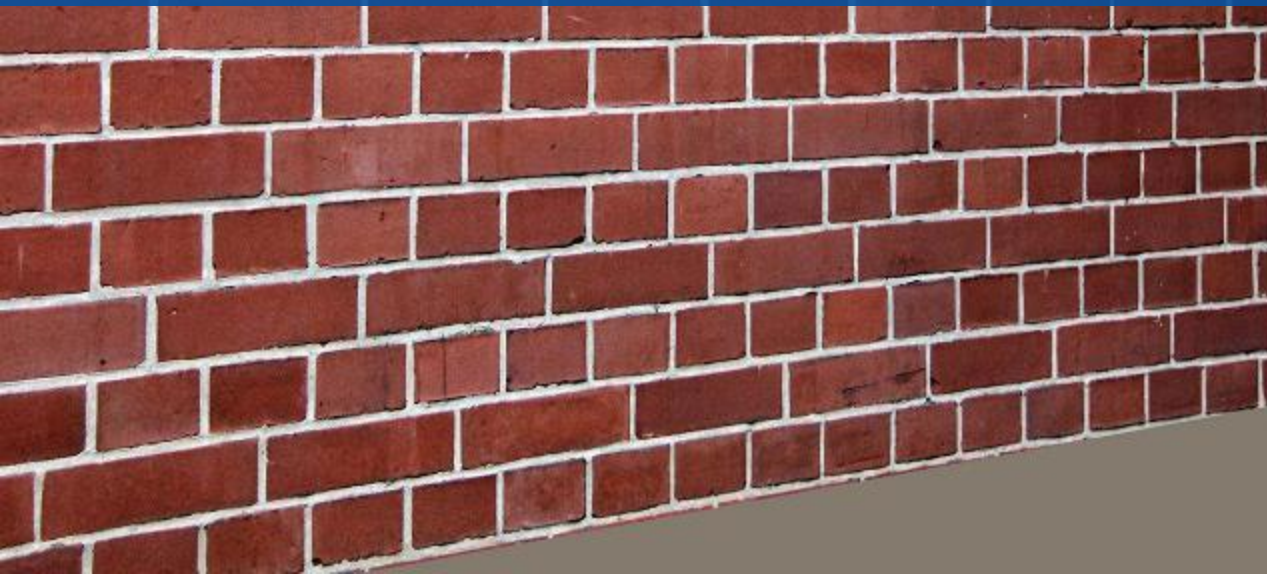
WET
Construction

VS



RAMCO HILUX
CALCIUM SILICATE Dry Walls & Ceilings

DRY
Construction



ADVANTAGE DRY WALL

Lesser Strain on Natural Resources

MINIMIZE USE OF

SAND

WATER

TIMBER

DRY
is better
than Wet
construction

RAW MATERIALS



WET
Construction

Cement, Sand,
Water & Brick



DRY
Construction

Calcium Silicate Boards,
Fibre Cement Boards,
Insulation and Channels



DRY
is better
than Wet
construction

ADVANTAGE DRY WALL

>90% Water Savings

WATER USAGE



WET
Construction

23
litres/sq.mtr.



DRY
Construction

2.0
litre/sq.mtr.



DRY
is better
than Wet
construction

ADVANTAGE DRY WALL

4 Times Lighter

WEIGHT



WET
Construction

120 Kg/m²
(115 mm thick)



DRY
Construction

34 Kg/m²
(74 mm thick)



DRY
is better
than Wet
construction

ADVANTAGE DRY WALL

4 Times Faster

SPEED OF CONSTRUCTION



WET
Construction

(Example 1000 Sq Ft)

Long
11 days



DRY
Construction

(Example 1000 Sq Ft)

Quick
3 days



DRY
is better
than Wet
construction

ADVANTAGE DRY WALL

**> 15 % Saving in Space.
More Carpet Area**

SPACE SAVING



WET
Construction

115 mm Brick Work

230 mm Brick Work



DRY
Construction

74 mm Drywall

98/118 mm Drywall



DRY
is better
than Wet
construction

ADVANTAGE DRY WALL

Superior Fire Resistance

FIRE RESISTANCE



WET
Construction

30 to 60 mins.



DRY
Construction

74 mm partition: **60 mins**
118 mm partition: **120 mins**

Up to 240 mins
possible with
customised specifications



DRY
is better
than Wet
construction

ADVANTAGE DRY WALL

Better Sound Insulation

SOUND INSULATION OFFERING



WET Construction

115 mm wall:
38-40 dB

230 mm wall:
45 dB



DRY Construction

74 mm partition:
45 dB

98/118 mm partition:
50-52 dB

Data used for calculations is based on assumptions and could vary in real time



DRY
is better
than Wet
construction

ADVANTAGE DRY WALL

**Assurance of consistency in
quality and performance**

MATERIAL QUALITY



WET Construction

No consistency in
quality of raw materials
like Sand, Bricks etc.



DRY Construction

Tested & Branded
Products & Accessories



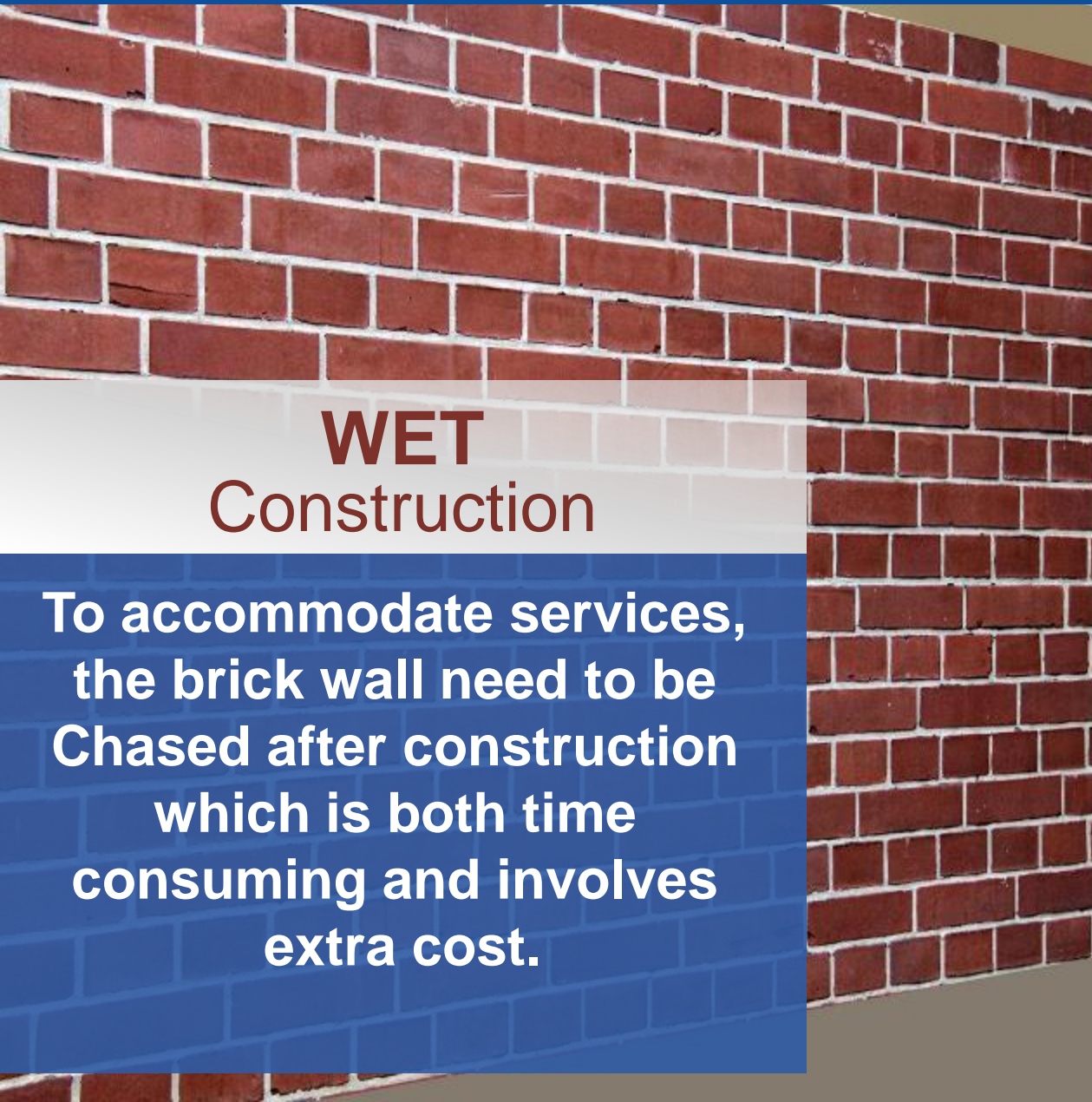
DRY
is better
than Wet
construction



ADVANTAGE DRY WALL

**Paint, Tiles, Laminate and
Wall paper can be easily
used for final finishing**

ACCOMMODATION OF SERVICES



WET Construction

To accommodate services, the brick wall need to be Chased after construction which is both time consuming and involves extra cost.



DRY Construction

Frame work is designed for Accommodating services. This makes work fast and easy with no additional cost.



ADVANTAGE DRY WALL

**Overall cost & time savings
& Of Course It is GREEN**

DRY
is better
than Wet
construction



Ramco Hilux

South Asia's only
4-hour fire rated system



Ramco Hilux's Superior Fire Resistance

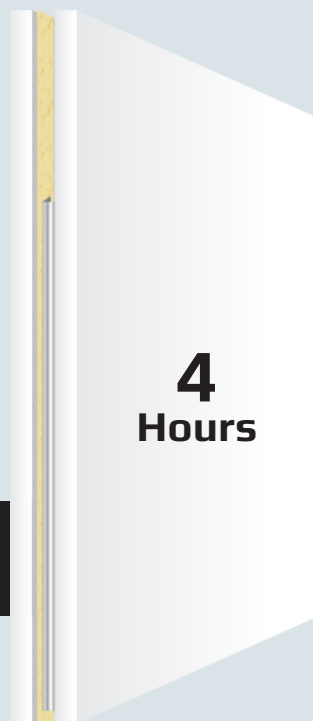
- ▶ Unlike other rapid construction materials like plywood and gypsum which can fuel fire, Ramco Hilux is made up of Calcium Silicate which resists fire
- ▶ This prevents fire propagation
- ▶ The system can withstand fire for 4 hours giving enough time to save lives and goods.

Fire Resistance

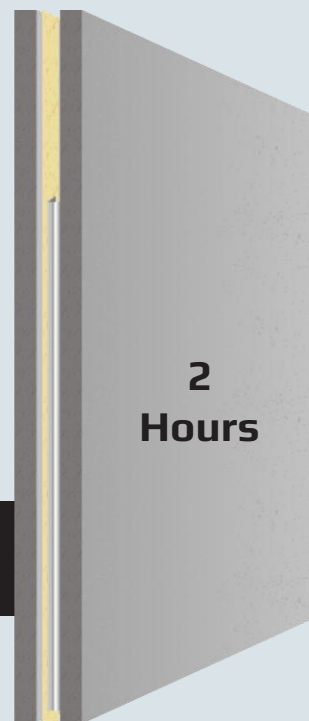
HILUX
VS
OTHERS

Value: Higher the better

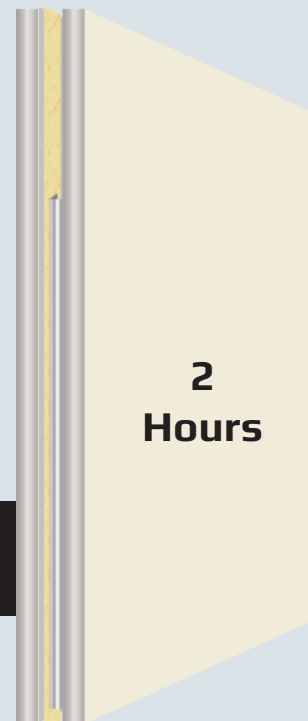
HILUX
Calcium Silicate Board



Fibre Cement Board



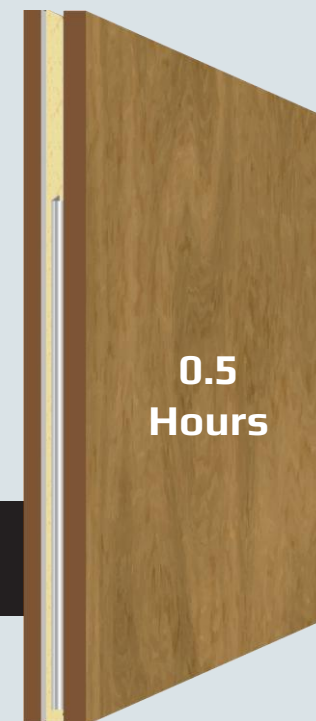
Gypsum



Brick Wall



Plywood





STANDARDS
Australia



from CBRI, Roorkee



PSB Singapore



THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS



BS EN 12467 : 2012

FIBRE-CEMENT FLAT SHEETS - PRODUCT SPECIFICATION AND TEST METHODS

British Standards Institution

Certifications



Certifications



PSB Singapore



Boards & Tiles

6 mm

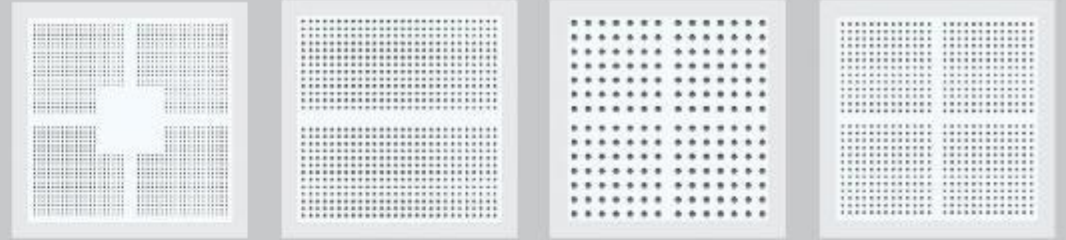
8 mm

10 mm

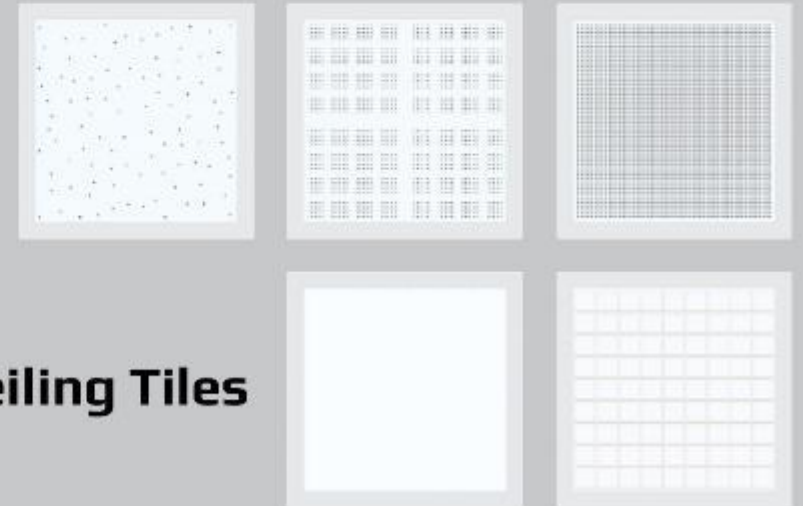
12 mm

RAMCO HILUX
CALCIUM SILICATE Dry Walls & Ceilings

Acoustic Tiles



Ceiling Tiles



■ Range of Applications ■



Walls



Partitions



Ceilings



Furniture

**Ramco now brings you
digitally painted boards**



HILUX
*Chroma
Walls*







Another first!

From Ramco

digitally-printed boards

HILUX
*Wall
Woods*



HILUX
*Marble
Walls*





HILUX
Visual
Walls





Our other offerings

Boards Tiles & Planks

4 mm

6 mm

8 mm

9 mm

10 mm

12 mm

14 mm

16 mm

18 mm

20 mm

RAMCO HICEM
Fibre Cement Board

Tiles



Cedar



Lake & Hill

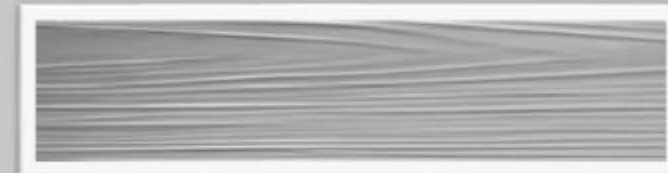


Oceanic

Planks



Black Walnut



Natural



Ruby Red

A Board for
every need

Boards, Tiles & Planks



→ Uses P V A Fibre



THE WORLD'S
MOST ADVANCED
INDUSTRIAL
ROOFING SHEET

■ Product-as-a-Service ■



An end-to-end
Services and Solutions
initiative for
Green Dry Construction



- Design & Material Consultancy
- Project Execution
- Site Quality Assurance
- Training in Dry-Construction Methods



Ramco Industries Limited



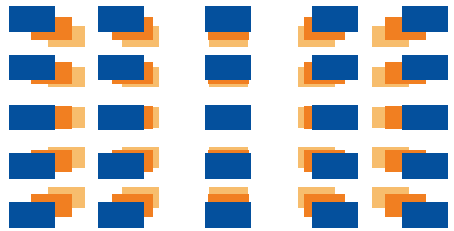
HILUX
CALCIUM SILICATE

is part of the Ramco Group,
a US \$ 1 billion industrial conglomerate
with business interests in



THANK YOU

RAMCO



HILUX

CALCIUM SILICATE Dry Walls & Ceilings