

12 YEARS OF
WARRANTY

Reynobond India

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REYNOARCH
ALUMINIUM COMPOSITE PANELS

FR NON COMBUSTABLE
COMPOSITE
PANELS

Create with a heart
built with a mind

NO MORE FIRE

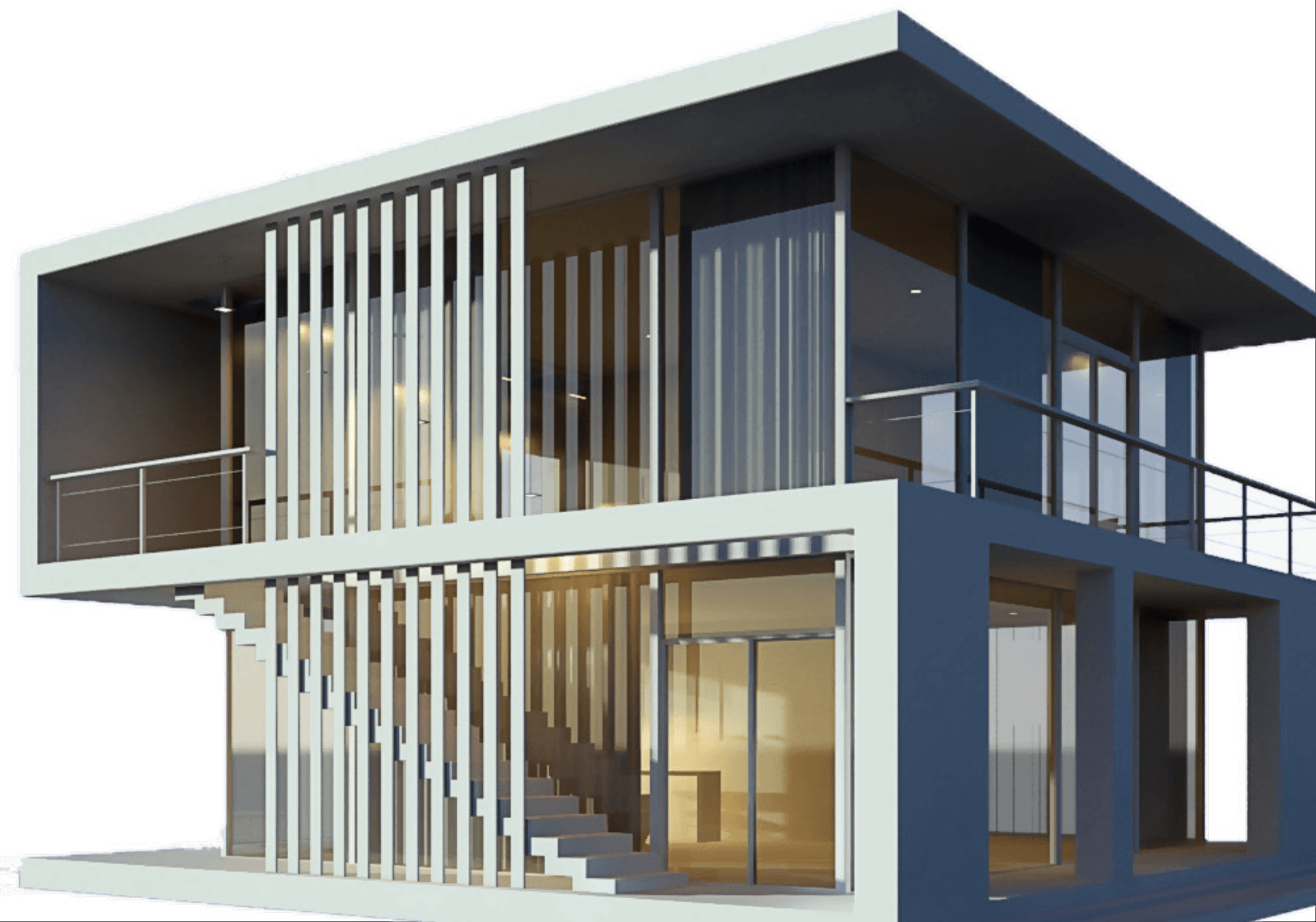
Reynoarch FR is the new generation exterior fire retardant Panels produced in A2 grade FR ACP with over 90% in-organic compound in the core sandwiched between two layers of metal skins. and B1 grade FR ACP with over 70% in the core sandwiched between two layers of metal skins. Reynoarch FR patented core formulation with a high percentage of Magnesium Hydroxide provides superior fire retardant capabilities making it an extremely safe cladding solution for buildings worldwide. Reynoarch FR-ACP has passed stringent Fire test certifications all over the world achieving product classifications as per EN 13501 – 1 A2 S1 d0 (Over 90% in-organic compound core content) and EN 13501 – 1 B S1 D0 (Over 70% Stone core content).



SOLID MAGNESIUM HYDROXIDE IN A ROCK FORM

Advantages of Fire Retardant chemical

- Filler and Flame Retardant/Smoke Suppressant in one product
- Environmentally Acceptable
- Halogen Free
- Non-Corrosive
- Reduces Smoke Density
- Non-Volatile
- Largely Inert
- Thermally Stable up to 340° C and thereafter undergoes Endothermic Decomposition releasing Water



REYNOARCH FR-A2 - Endothermic Reaction



Magnesium Oxide MgO (s)

+



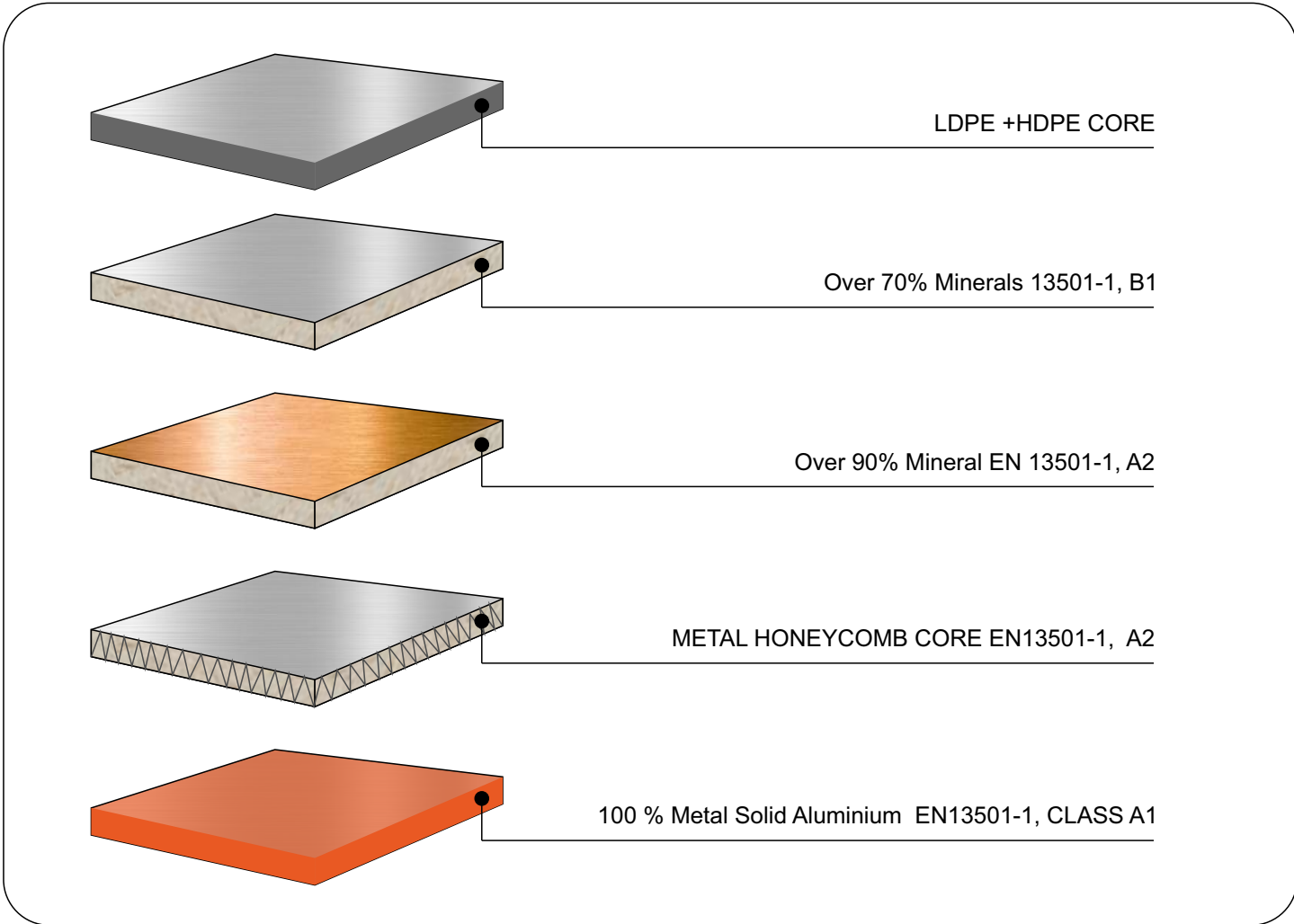
Water (H2O) (g)



REYNOARCH FR-A2's formulated CORE exposed to a temperature over 3320C


COMPARISION OF REYNOARCH ALUMINIUM COMPOSITE PANELS

Different Types of Cores



PERFORMANCE	LDPE + HDPE CORE	Over 70% Minerals 13501-1, B1	Over 90% Mineral EN 13501-1, A2	METAL HONEYCOMB CORE EN13501-1, A2	100 % Metal Solid Aluminium EN13501-1, CLASS A1
Combustibility Rating	Combustible	Non Combustible	Non Combustible	Non Combustible	Non Combustible
NFPA 285/ BS 8414 Pass	NO	YES	YES	YES	YES
ASTM E 84 Core Burning Class A Rating	NO	YES	YES	YES	YES
ASTM D 1929 Ignition	NO	YES	YES	YES	YES
EN 13501-1	E	B	A2	A2	A1
Direct Flame Over 1000° C Penetration	20 Seconds	18 Minutes	30+ Minutes	55 Seconds	30 Seconds

TECHNICAL DATA SHEET
REYNOARCH-FR ACP (REYNOARCH FR-ACP's)



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✦ Testing
✦ Research
✦ Innovation

TEST REPORT

Report No.: **2012120006**

Page 2 of 5
Date: 22-12-2020


I. PHYSICAL & MECHANICAL TEST
1.

Test Performed on : 12-12-2020 to 19-12-2020

ALUMINIUM PANEL


TEST	TEST STANDARD	REQUIRED (as per Specified)	RESULT	COMPLIENCY
<u>Panel Dimension</u>				
Panel Thickness, mm	DIN 1784	4 ± 0.2	4.0	Yes
Width, mm	DIN 1784	+6 / +10	1220 / 2440	Yes
Weight, Kg/m ²	AAL/SOP/MECH	± 5%	7.64	Yes
<u>Technical Properties</u>				
Tensile Strength of Al, N/mm ²	EN 485-2	125 - 185	160.0	Yes
0.2% Proof Stress, N/mm ²	EN 485-2	>90.0	130.0	Yes
Elongation at Break, %	EN 485-2	>4.0	6.0	Yes
Yield Strength, N/mm ²	EN 485-2	>90.0	116.0	Yes
Elasticity Modulus of Al	EN 1999 1-1	65,000	70,608	Yes

Authentication : To Check authenticity of Test report (i). Scan QR code to get original data.



Govt. Approved Laboratory


ISO 9001 : 2015, ISO 14001:2015 & OHSAS 18000:2007 Certified Laboratory



Terms & Conditions:-

5. Sample will not be retained more than one month for chemical and three month for mechanical unless specified instructed. 6. Sample analysis conducted on as received basis and followed by customer description unless specified otherwise. 7. The laboratory will not be liable for sample destruction/damage during testing, unless instructed otherwise. 8. Any complaints matter about this report should be communicated in writing, within 7 days of issue of this report. 9. The result listed refer only to the tested samples and applicable parameters as described by customer. Endorsement of product is neither inferred nor implied. 10. Total liability of our laboratory is limited to the invoiced amount only. 11. This report cannot be used as an evidence in a court of law without the written approval of the laboratory.

MSF 5-10-2021



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TEST REPORT

Report No.: **2012120006**

Page 3 of 5

Date: 12-12-2020

2. **ACP PERFORMANCE TEST**


Test Performed on : 12-12-2020 to 19-12-2020

ALUMINIUM PANEL

TEST	TEST STANDARD	REQUIRED (as per Specified)	RESULT	CONFIRMITY
<u>Technical Properties</u>				
Section Modulus W, cm ³ /m	DIN 53293	>1.75	1.94	Yes
Rigidity kNcm ² /m	DIN 53293	>2400	4088	Yes
Linear Thermal Expansion mm/m°C (at 100°C temp. difference)	EN 1999 1-1	>2.0	2.4 mm at 100°C temperature difference	Yes
<u>Alloy Grade</u>	EN 573-3	Al alloy series 3000	Al alloy grade confirm as series -3000	Yes
Base Metal Composition,(%)				
Copper			0.069	
Silicon			0.088	
Iron			0.437	
Nickel			0.004	
Manganese			1.06	
Zinc			0.003	
Lead			0.002	
Tin			0.002	
Titanium			0.001	
Magnesium			0.626	
Chromium			0.009	
Aluminium			97.70	

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MSF 5.10.01

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TEST REPORT

Report No.: **2012120006**

Page 4 of 5
Date: 22-12-2020

3. ACP PERFORMANCE TEST

Test Performed on : 12-12-2020 to 19-12-2020

ALUMINIUM PANEL

TEST	TEST STANDARD	REQUIRED	RESULT	CONFIRMITY
		(as per Specification)		
Core		Non-combustible Mineral Filled Polymer	Non-combustible mineral filled polymer observed	Yes
Specific Gravity	ASTM D792	1.45 ± 0.2	1.45	Yes
Heat Deflection Temperature, °C	ASTM D648	>180	214	Yes
Adhesive Film, µ	ISO 2360	>60	80	Yes
Surface				
Surface of Coating	---	Coil Coating	Coil Coating	Yes
Lacquering	ASTM E1252	Fluorocarbon based (e. g. PVDF)	Lacquering identified as Lacquered-PVDF (Polyvinylidene fluoride)	Yes
Coating Thickness, µm	ISO 2360	24 - 34	30.0	Yes
Back Side Finish	---	Polyester Finish	Polyester Finish	Yes
Gloss, % (at 60° initial value)	EN 13523-2	30 - 80	36 (± 5%)	Yes
Pencil Hardness	EN 13523-2	HB - F	HB (3H)	Yes

Authentication: To Check authenticity of Test report (in Scan QR code to get original data).

Terms & Conditions:-

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MSF 5.10.01

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TEST REPORT

Report No.: 2012120006

Page 4 of 5
Date: 23-12-2020

3. ACP PERFORMANCE TEST

Test Performed on : 12-12-2020 to 19-12-2020

ALUMINIUM PANEL

TEST	TEST STANDARD	REQUIRED (as per Specification)		CONFIRMITY
		RESULT		
Core		Non-combustible Mineral Filled Polymer	Non-combustible mineral filled polymer observed	Yes

Specific Gravity	ASTM D792	1.45 ± 0.2	1.45	Yes
Heat Deflection Temperature, °C	ASTM D648	>180	214	Yes
Adhesive Film, μ	ISO 2360	>60	80	Yes
Surface	---			
Surface of Coating		Coil Coating	Coil Coating	Yes
Lacquering	ASTM E1252	Fluorocarbon based (e.g. PVDF)	Lacquering identified as Lacquered/PVDF (Polyvinylidene fluoride)	Yes
Coating Thickness, μm	ISO 2360	24 - 34	30.0	Yes
Back Side Finish	---	Polyester Finish	Polyester Finish	Yes
Gloss, % (at 60° initial value)	EN 13523-2	30 - 80	36 (± 5%)	Yes
Pencil Hardness	EN 13523-2	HB - F	HB (3H)	Yes

Authorisation: To Check authenticity of Test report go to: www.atmylabs.com or get per regional data.

Terms & Conditions:-

1. Samples will not be retained more than one month for chemical and three month for mechanical unless specified instructed. 2. Sample analysis conducted as per standard basis and followed by customer description unless specified otherwise. 3. The laboratory will not be liable for sample destruction/damage during testing, unless instructed otherwise. 4. Any complaints matter about this report should be communicated in written, within 7 days of issue of this report. 5. The result listed refer only to the tested samples and applicable parameters as described by customer. Endorsement of product is neither inferred nor implies. 6. Total liability of our laboratory is limited to the amount received only. 7. This report cannot be used as an evidence in a court of law without the written approval of the laboratory.


MMF-18.01.01

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TEST REPORT

TEST / STUDY
FIRE - RESISTANCE PERFORMANCE TEST
ON ALUMINUM COMPOSITE PANEL (ACP)
(ASTM E -119-19)

ISSUED TO
REYNOBOND INDIA
2E/7, BLOCK E 2, JHANDEWALAN EXTENSION
DELHI-110055



DATE OF ISSUE REPORT
DECEMBER 17, 2020

TEST FACILITY
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REPORT NO. – 201212002/01

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TEST REPORT

TEST / STUDY
**FIRE – CLASSIFICATION OF CONSTRUCTION PRODUCTS AND
BUILDING ELEMENTS (EN 13501-1)
ON ALUMINUM COMPOSITE PANEL (ACP)**

ISSUED TO
REYNOBOND INDIA
2E/7, BLOCK E 2, JHANDEWALAN EXTENSION
DELHI-110066



DATE OF ISSUE REPORT
DECEMBER 17, 2020

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REPORT NO. – 201212002/02


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TEST REPORT

TEST / STUDY

**NFPA 285 -FIRE PROPAGATION CHARACTERISTICS OF EXTERIOR
NON-LOAD-BEARING WALL ASSEMBLIES CONTAINING
COMBUSTIBLE COMPONENTS**

ISSUED TO
REYNOBOND INDIA
2E/7,BLOCK E 2, JHANDEWALAN EXTENSION
DELHI-110055



DATE OF ISSUE REPORT
DECEMBER 19, 2020

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REPORT NO. – 201212002/03

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FIRE PERFORMANCES

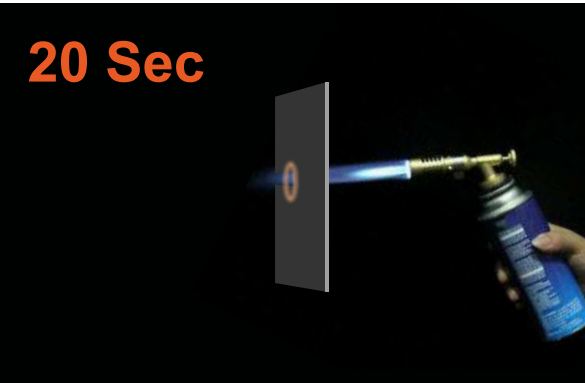
— NON COMBUSTIBLE COMPOSITE PANELS

REYNOARCH

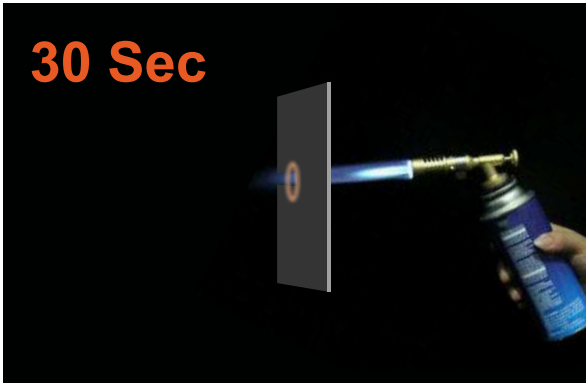
FIRE
RETARDANT
PANELS

A panel burning test was conducted with direct flame at a temperature of 1500°C on five different panels. The time the panels withstood fire was recorded as follows.

Panels	Time withstood by panel
LDPE Core - ACP	20 Seconds
Solid Aluminium	30 Seconds
B Core -ACP	18 Minutes
A2 Core -ACP	30 Minutes
Honeycomb Core A2 -ACP	55 Seconds



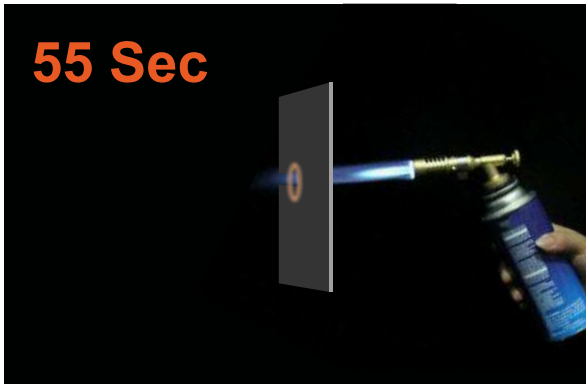
LDPE CORE - ALUMINIUM COMPOSITE
PANEL FIRE PENETRATED IN 20 SECOND



SOLID ALUMINIUM PANEL FIRE
PENETRATED IN 30 SECOND



B CORE - ACP PANEL - FIRE
PENETRATED IN 18 MINUTES



HONEYCOMB PANEL - A2 - FIRE
PENETRATED IN 2 MINUTES



A2 MINERAL CORE - ACP PANEL - FIRE PENETRATED IN 30 MINUTES

NFPA 285: 2012 Standard Test Reynoarch (FR-A2, FR-B) withABTI Substructure System

Reynoarch A2 &Reynoarch B) undergoing the NFPA 285 Test in NABL Accredited tab, ATMY /

Fire Test for Reynoarch astm 119 underwrite in NABL Accredited ATMY labs

Sample Photograph



NFP A 285 PANEL FACES PRIOR TO FIRE TEST



TEST SPECIMEN AFTER IGNITION OF ROOM BURNER



TEST SPECIMEN AFTER IGNITION OF WINDOW BURNER



CRACKING AND SPALLING OF PANELS



JOINTING SHEETS FOR INSTALLATION



EN-1350-1Reynoarch for Surface
underinvolve in NABL Accredited ATMY lab



SPECIMEN BEFORE TEST



SPECIMEN DURING TESTING



SPECIMEN AFTER TESTING

*****End of report*****

NO
MORE
FIRE NOW

REYNOARCH

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