



SIXTY FIVE CORPORATION CO.,LTD.

ASAWA SMART PANELS

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“ASAWA SMART PIR
PANELS – Applications

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Insulation
Materials



ASAWA SMART PANELS

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Company Profile

ASAWA Insulation Pvt. Ltd. (AIPL) is the first company in India to start the manufacturing of pre-insulated PIR (Polyisocyanurate) panels and accessories under the brand name of SMART panels. AIPL is an ISO9001:2015 Quality Certified Manufacturer having state-of-the art manufacturing facilities at Khopoli (MH), Hyderabad (TG) & Kolkata (WB) with installed capacity of 3,000,000 sqm per annum. AIPL is also an ISO 14001:2004 certified company which signifies our focus on preserving the environmental by adopting Environment Management System. Our Contemporary equipment, rigorous quality control processes and commitment to international quality standards allow us to provide outstanding services to each of our valuable and esteemed clients. AIPL understands the dynamics and intricacies of different industries and has the expertise to provide optimized solutions for industry specific requirements and flexibility to deliver solutions quickly and cost-effectively.

ASAWA SMART PIR PANELS

ASAWA SMART PANELS

ASAWA SMART panels are manufactured of complete CFC & HCFC free closed cell Polyisocyanurate foam “sandwiched” between aluminum foil or Kraft paper with standard size of 4 m (L) x 1.2 m (W) and thickness varying from 12 mm to 75 mm (Length customization is possible)

ASAWA SMART panels are used in the construction of HVAC ducting system, Underdeck & Overdeck insulation, Wall insulation, Roof insulation, Cold storages, Glass façade, Floor insulation, Cavity insulation, False ceiling, etc.

ASAWA SMART panels are economical with energy saving upto 20%, having lowest thermal conductivity (0.021W/m.k), Environment friendly (Green Building Product), Fire retardant (BS476, Class 0 product certified by Exova Warringtonfire – US & UK and CBRI Roorkee – India & TUV SUD – Singapore), Rodent proof, Negligible Water Absorbtion, No Water Vapour Transmission, Acoustic, Fast track fabrication and installation.



ASAWA SMART PIR PANELS – Applications

ASAWA SMART panels are used worldwide in Commercial, Residential, Hospitals and Industrial applications for HVAC Ducting System, Underdeck & Overdeck insulation, Wall insulation, Roof insulation, Cold storages, Glass façade, Floor insulation, Cavity insulation, False ceiling, etc. In industries where, high level quality and hygiene is vital for their business processes such as food processing, pharmaceuticals, laboratories, electronics, and medical centers, ASAWA SMART panels provide an excellent insulation solution to ensure the same.

(PICTURE)

Thickness and surface of ASAWA SMART panels will differ as per the requirement, application and project specifications. Various applications of ASAWA SMART PIR Panels are as follows.



“ ASAWA SMART PIR PANELS – Cavity Wall Insulation

ASAWA SMART Panels can easily be fixed to any surface and prevents any possibility of thermal or cold bridge formations.

We offer three variants for this application:

- PIR foam sandwiched between Aluminum foil on both sides.
- PIR foam sandwiched between Aluminum foil and kraft paper.
- PIR foam sandwiched between kraft paper on both sides.

“ ASAWA SMART PIR PANELS – HVAC Ducting System

It is made up of ASAWA SMART Panels covered with Aluminum foil on both sides having 15mm/20mm/25mm thick panels for indoor application and 20mm/25mm/30mm thick panels for outdoor application with a foam density of at least 51 kg/m³. The panels are later cut, shaped, fabricated and glued into different profiles to form the final duct. The duct is later connected to other ducts via polymer/Aluminum profile to complete the system.

The duct are manufactured to meet as per standard EN13403 which are machine CNC cut and are assembled with AIPL employed fabricators. These fabricators are also skilled to carry out entire fabricators as per standard set AIPL at site.



“**ASAWA SMART PIR PANELS – False Ceiling**”

ASAWA SMART Panels are used as False ceiling to prevent heat and sound transfer as it has better insulation and acoustic property as compared to calcium silicate tiles. It is also four times lighter in weight as compared to Calcium Silicate tiles thus it requires less structural support and eliminates sagging.

“**ASAWA SMART PIR PANELS – Floor Insulation / Roof Insulation**”

ASAWA SMART Panels are applied seamlessly on the underside of the floor to prevent heat transfer and seals the floor in contrast to the other systems. Similarly it is used for Roof insulation.

“**ASAWA SMART PIR PANELS – Underdeck / Overdeck Insulation**”

ASAWA SMART Panels are fixed to the surface of the roof to prevent heat transfer. The thickness of panels varies from 12 mm to 75mm with perforation if required. The panels can be customized in length to cover purlin to purlin distance for industrial shed. We offer three variants for this applications:

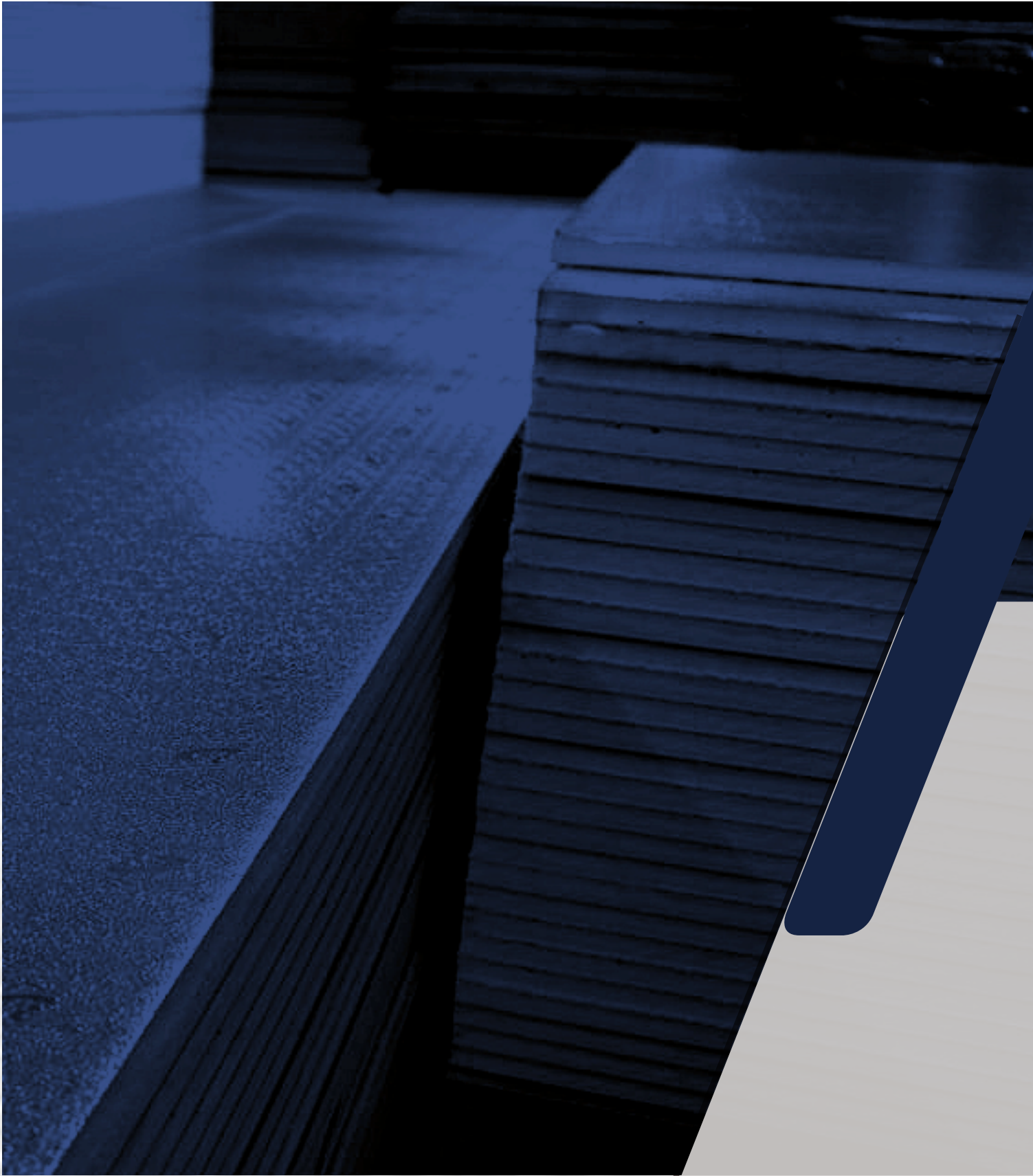
- For PEB shed/Overdeck: PIR foam sandwiched between aluminum foil on both sides.
- For SLAB PIR foam sandwiched between aluminum foil and kraft paper.
- For SLAB PIR foam sandwiched between kraft paper on both sides.



ASAWA SMART PIR PANELS – Benefits

ASAWA SMART PANELS

- ✔ Low “U” value
- ✔ Highest “R” value
- ✔ Lowest Thermal Conductivity
- ✔ Cleanable and Hygienic
- ✔ Fire Resistance, BS 476 Part 5,6 & 7 of class o
- ✔ Environment Friendly CFC and HCFC free
- ✔ Energy saving up to 20% annually
- ✔ No water-Vapor Transmission
- ✔ No water Absorption
- ✔ Rodent Proof
- ✔ No fungus growth
- ✔ Uniform insulation density
- ✔ More than 95% closed cell
- ✔ Economically priced than GI ducting with insulation material
- ✔ Excellent Dimensional stability
- ✔ Damps maximum noise
- ✔ No corrosion
- ✔ Clean air, contains no microfiber
- ✔ Light weight, Only 15% of GI ducting system with insulation
- ✔ Space saving
- ✔ Fully sealed systems
- ✔ Low handing costs
- ✔ Low structural support requirement
- ✔ Site fabrication capability
- ✔ Fine aesthetics; visually more appealing
- ✔ No flaking of insulation
- ✔ No limit to duct sizes
- ✔ High-compressive strength



Comparison With Other Insulation Materials

ASAWA SMART PANELS (PIR) VS GI DUCT / GLASSWOOL

Description	ASAWA SMART PANEL	GI DUCT / GLASSWOOL
Insulation	Uniform, Self Insulated	Insulation is not uniform and needed additionally
Thermal Conductivity	0.021 W/m.K	0.036 W/m.K
Leakage	Fabrication methodology and joinery system lead to negligible air leakage	Higher chances of air leakage because of contraction and expansion over a period of time
Energy	Electricity saving up to 20% due to minimal air leakage and better thermal conductivity of insulation	Higher electricity costs
Noise	PIR panels ensure sound proofing & acoustic performance	Additional acoustic insulation is required to reduce noise
Water Absorption	Negligible water absorption (0.03% after immersion in water for 24 hrs)	Water absorption exists at a very high rate
Material Handling Precaution	Not required	Required as Glasswool causes skin irritation and affects the respiratory system
Repair & Maintenance	No maintenance and very easy to repair if physical damage occurs, no need to replace to entire system, only damaged part is repaired	Requires periodic maintenance and if damage occurs the complete section of the duct needs to be replaced
Cost	Comparable	-
Fire Property	No fire hazards	No fire hazards
Space	Less space is required as duct can be installed close to ceiling	More space is required for fixing insulation & cladding
Weight	1/6th of GI duct	6 times heavier in weight
Product Life	More	Less due to corrosion
Appearance	Nice and appealing	Less appealing
Site Fabrication	Possible, six times faster	Possible, but time consuming
Corrosion	No corrosion	Corrosion due to humidity

ASAWA SMART PANELS (PIR) VS NITRILE INSULATION

Description	ASAWA SMART PANEL	GI DUCT / NITRILE
Insulation Property	Higher	Lower
Equivalent Thickness	20 mm	38 mm
Thermal Conductivity	0.021 W/m.K	0.033 W/m.K
Water Vapor Transmission	No	Yes
Water Absorption	0.03%	0.90%
Surface Facing	Both side Embossed Aluminum foil	No facing
Apparent Closed Cell	More than 95%	Up to 90%
Fire Propagation Properties	BS 476, Part 6, Class 0	BS 476, Part 6, Class 0
Flame Spread as per ASTM E84	Less	More
Acoustic Property	Higher	Lower
Product Life	More	Less
Performance Reduction	Not seen even in the longer run	Cracks are seen after 2 to 3 years

ASAWA SMART PANELS (PIR) VS Phenolic Foam

Description	ASAWA SMART PANEL	GI DUCT / PHENOLIC
Surface	80 Micron Embossed Aluminum Foil	25 Micron Aluminum Foil
Thermal Conductivity	0.021 W/m.K	0.022 W/m.K
Water Vapor Transmission	0.00	1.15 ng.N.s
Water Absorption	0.03%	0.90%
Temperature Range	-40 c to 150 c	-20 c to 90 c
Apparent Closed Cell	More than 95%	Up to 90%
Fire Propagation Properties	BS 476, Part 6, Class 0	BS 476, Part 6, Class 0
Flame Spread as per ASTM E84	Less	More
Weight		
Product Life	1.1+-0.1 Kg/m ³	1.3+-0.1 Kg/m ³
Effect of Fire	More	Less
Maximum Allowable wind Velocity	Charred Surface Up to 35 m/s	Cracks are seen on surface Up to 25 m/s

ASAWA SMART PANELS (PIR) VS Extruded Polystyrene (XPS)

Description	ASAWA SMART PANEL	GI DUCT / XPS
Thickness	15-75 mm	25-100mm
Length	Up to 4000 mm	Up to 2000 mm
Width	1200 mm	1000 mm
Density	51 Kg/m ³	Less than 35 Kg/m ³
Surface	With Aluminum Foil or Kraft paper	Nil
Fire Retardant Rating	BS 476, Part 6, Class 0	Class 1
Thermal Conductivity	0.021 W/m.K	0.038 W/m.K
Water Absorption	0.03%	More than 1%
Biological	No fungus growth	Fungus growth
Green Building Product	CFC & HCFC Free	CFC Free
Service Temperature	-40 c to 150 c	-10 c to 110 c





TECHNICAL DATA SHEET

ASAWA SMART PANELS (PIR)

GENERAL CHARACTERISTICS:

ASAWA SMART Panels are manufactured of complete CFC & HCFC free closed cell Polyisocyanurate (PIR) foam “sandwiched” between Aluminum foil on each side.

DIMENSIONAL & TECHNICAL CHARACTERISTICS	
Dimensions of Panel (L x W)	4000 mm x 1200 mm
Aluminum Foil Type	Embossed / Embossed
Aluminum Foil Thickness	80 – 200 / 80 – 200 Micron
Panel Thickness	20 – 30 mm (Indoor or Outdoor)
Material for Insulation	PIR (Polyisocyanurate)
Thermal Conductivity	0.021 W/m.K
Density	51 Kg/m ³ ; with a tolerance of +/-3 kg/m ³
Water Absorption	0.03%
Biological	No fungus growth
Green Building Product	CFC & HCFC Free
Service Temperature	-40 c to 150 c

Certifications

DESCRIPTION	STANDARD FOLLOWED	CERTIFICATION / LABORATORY	RESULT
ISO	9001:2008	URS	ISO CERTIFICATED
ISO	14001:2004	ICL	ISO CERTIFICATED
THICKNESS	UNI EN 823:2013	ISTITUTO GIORDANO	MEET UNI EN 13403
WIDTH	UNI EN 823:2013	ISTITUTO GIORDANO	MEET UNI EN 13403
GRIHA	GRIHA V.3 CRITERION 14,27	GRIHA COUNCIL	GRIHA CERTIFICATED
WATER ABSORPTION	ASTM C 1209:1998	DUBAI CENTRAL LABORATORY	0.03%
ODOR EMISSION	ASTM C 1304-08	DUBAI CENTRAL LABORATORY	NO ODER EMISSION
ECO WARRANTY	ICL	MANAGEMENT STANDARD	AWARED
OXYGEN INDEX	ASTM D 2863	BHARAT TEST HOUSE	<29.0
HORIZONTAL FLAMMABILITY	UL 94	BHARAT TEST HOUSE	V-0
IGNITABILITY TEST	BS476, PART 5 & 12	CBRI ROORKEE, INDIA	"P" NOT EASILY IGNITABLE
FIRE PROPAGATION INDEX	BS476 PART 6 & 7	BHARAT TEST HOUSE	CLASS 0
SURFACE SPREAD OF FLAME	BS 746, PART 7	WARRINGTONFIRE CBRI ROORKEE, INDIA	CLASS "1"
SMOKE DEVELOPMENT INDEX	ASTM 84	WARRINGTONFIRE	CLASS "1" OR "A"
WATER VAPOR TRANSMISSION	ASTM E 96 – 00	DUBAI CENTRAL LABORATORY	0.00 PERMS
FLEXURAL STRENGHT OF THERMAL INSULATION	ASTM C 203 05A	DUBAI CENTRAL LABORATORY	MORE THAN 650 KPA
COMPRESSIVE STRENGHT	ASTM D 1621:00	DUBAI CENTRAL LABORATORY	MORE THAN 650 KPA

DESCRIPTION	STANDARD FOLLOWED	CERTIFICATION / LABORATORY	RESULT
GREEN BUILDING PRODUCT	NORM OF IGBC	INDIAN GREEN BUILDING COUNCIL	APPROVED
SOUND ABSORBING MATERIAL	IS:8225 – 1987	NATIONAL PHYSICAL LOBARATORY	NRC = 0.3
SOUND TRANSMISSION LOSS	ISO 140:PART3	NATIONAL PHYSICAL LABORATORY	STC = 0.32
OVERALL MIGRATION	IS 9845	BHARAT TEST HOUSE	1.1
HEAVY METALS	AAS	BHARAT TEST HOUSE	UNDER MATERIAL REGULATION
BACTERIA RESISTANCE FUNGUS	ASTM G 22, ASTM G 21, IS 3144:1992	BHARAT TEST HOUSE	NO GROWTH FOUND
CLASS 0 COC	BS476 PART 6,7	TUV SUD	CLASS 0
GREENPRO CERTIFICATION	-	CONFERDERATION OF INDIAN INDUSTRY	GREEN PRODUCT
GRIHA CERTIFIED	GRIHA V.3 CRITERION 14,27	GRIHA	CERTIFIED
FIRE SAFTY	BS476 PART 6,7	WARRINGTONFIRE	FAS PER BUILDING REGULATION 2000
THERMAL RESISTANCE	UNI EN 12667:2002	ISTITUTO GIORDANO	1.05 m2K/m2
HORIZONTAL BURNING	IS 11289 (PART 12) 1988	ARAI	APPROVED
COMPRESSIVE STRENGHT	IS 11239 (PART 11) 1985	ARIA	143.4 KN/m2
MICROBIAL GROWTH TEST	CLAUSE 7.4 (EN 13403:2003)	ISTITUTO GIORDANO	NO GROWTH
DIMENSIONAL STABILITY	IS 11239 (PART 3) 1988	ISITUTO GIORDANO	-0.1%
EFFECT OF RH	EN 13403:2003	ISITUTO GIORDANO	NO CHANCE IN K VALUE AT 97% RH
LEAKAGE TEST	DW 144	BSRIA	CLASS C
EFFECT OF SALTY ATMOSPHERE	ISO 9227	ISITUTO GIORDANO	NO COROSSION

DESCRIPTION	STANDARD FOLLOWED	CERTIFICATION / LABORATORY	RESULT
DENSITY	ASTM D 1622:03	BS EN 823:95	51 Kg/m ³
THERMAL CONDUCTIVITY	UNI EN 12667:2002	IISITUTO GIORDANO	0.019 W/mk
RESISTANCE TO HIGH TEMPERATURE	EN 13403:2003	ISITUTO GIORDANO	NO CHANCE UP TO 110 C
PRESSURE DROP DUE TO FRICTION	EN 13403:2003	ISITUTO GIORDANO	0.008
PERFORMED RIGID	IS 12436:1988	ARAI	APPROVED
PHYSICAL & CHEMICAL ANALYSIS OF POLYMER PROFILE	ELEMENTAL ANALYSIS	CMI	PASSED
THERMAL CONDUCTIVITY	ASTM C 518:2010	DUBAI CENTRAL LABORATORY	0.021 W/m.k
RESISTANCE AGAINST PRESSURE	EN 13403:2003	ISITUTO GIORDANO	
THERMAL AND HUMID AGING	ASTM D 2126:09	DUBAI CENTRAL LABORATORY	NO MAJOR DEVIATION
LEAKAGE TEST FOR NON METALLIC DUCTS	BS EN 13403	ISITUTO GIORDANO	CLASS C
THICKNESS OF THERMAL INSULATION	BS EN 823:95	DUBAI CENTRAL LABORATORY	21 MM
WATER VAPOR TRANSMISSION	UNI EN 12086:2013	ISITUTO GIORDANO	0.000MG / m ² .h.pa
WATER VAPOR RESISTANCE	UNI EN 12086:2013	ISITUTO GIORDANO	<1430(m ² .h.pa)/mg
FIRE RATING TEST	NTL	2 HOURS 250 C	TEST PASSED
EFFECT OF PARACETAMOL & CHLORIDE	IMMERSION TEST	ITL LABS	NO REACTION
RODENT	RDS/SPN/204/201/VER1.1	EUROFIN	NO DAMAGE

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ASAWA SMART PANELS



Accessories

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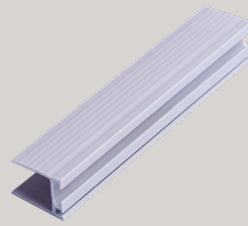
PVC U FLANGE 20 mm.



PVC BRANCH FLANGE 20 mm.



PVC FLANGE 20 mm.



PVC BAYONET 20 mm.



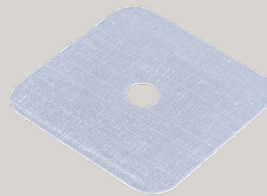
GL-PLATE Corner
20 x 20 mm.



Tiger Connector



GL-PLATE Square 60 x 60 mm.
GL-PLATE Square 80 x 80 mm.



Boot Damper



Covering angle 20 mm.



PVC SHAPE DISK



Aluminium tape



Paint glue 15kg



Silicone sealant



SMART TOOL BOX

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