



HARWAL POLYURETHANES

RIGID POLYURETHANE SPRAY SYSTEMS

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Group HARWAL
MANUFACTURING TECHNOLOGIES

IP Harwal Polymer is the Premier Supplier for Rigid Polyurethane Spray Systems.

IP Harwal Polymer, a division of Interplast Group produces Rigid Polyurethane systems marketed under the brand name “HARWAL POLYURETHANES”.

Harwal Polyurethane products and systems meet the demand of a growing insulation industry and are utilized for Spray Foam, Insulated Panels, Can Coolers, Water Heaters, Thermoware and Polyurethane Glue applications. The products are DCL certified, approved by leading GCC consultants and currently marketed across U.A.E , Oman, India, Saudi Arabia and Egypt.

Harwal Polyurethane Spray Foam (HPSP) product range includes Water Blown Spray Foam, an environment friendly and sustainable system which has been specified in various private and government housing projects such as the Mirfa Housing Complex by Abu Dhabi government (pic below for reference).



About Us

With over a decade of manufacturing expertise in polyurethane insulation products, IP HARWAL POLYMER specializes in the manufacture of Plastic Compounds, Recycled Polyols and Rigid Polyurethane Systems.

Headquartered in Dubai, with additional sales & production facilities in Sharjah, IP HARWAL POLYMER has successfully increased market share over the years by delivering quality consistent products with superior customer service.

IP HARWAL POLYMER has established long term technology partnerships with leading European Polyurethane experts to set up a multi-functional SYSTEM HOUSE producing PET/PA/ PU based Polyester Polyols and a blending production facility with a capacity of 20,000 tons per year.

IP HARWAL POLYMER is a division of Interplast Co. Ltd. Established in 1981, INTERPLAST is the leading manufacturer of plastic resins and compounds catering to different applications such as pipes, cable insulations and more. ALUPEX is the renowned brand for of Non-Combustible Aluminium Composite Panels manufactured by INTERPLAST. The Group manufactures Conduits, DECODUCT, EDISON are renowned brands of Conduits, Switches & Sockets manufactured by the Group. INTERPLAST exports to over 50 countries in the MENA & Europe region through its sales & production facilities in Dubai, Sharjah, Abu Dhabi, Riyadh, and London.

Harwal Polyurethane Spray System

The Ultimate Product for Combo Roofing Insulation

Harwal spray foam chemicals are ideal material for insulating homes with the combo roofing system. The spray foam insulation increases energy efficiency, air quality and most importantly overall comfort of your home. It reduces water leakage, air and moisture intrusion, which calculate into reduction of energy bills.

The HPSP series is a Spray Polyurethane Rigid foam system developed with the use of various blowing agents. The foam insulation strengthens the roof and helps to protect the internal air form pollutants and allergens.

Thermal Insulation is internationally accredited to save consumption of electrical power. It is a proven solution to help reduce electricity costs which in turn provides economical revenue to the country and reduces financial burden on the government.

In addition, thermal insulation in buildings plays a pivotal role in reducing environmental pollution and creates a comfortable atmosphere for the residents of the thermally insulated buildings.



Mechanical Properties of the Foam (Certified by Dubai Central Laboratories - DCL)

- Core Density : 45 – 48 kg/m³
- Dimensional Stability (-30 °C, 48hr) : ≤ 1.0 %
- Compressive Strength : 287.1 kPa
- K Value @ 23 °C : ≤22.00 mW/mK

Harwal HPSP 3040 is a high quality specialized Foam System suitable for Residential and Industrial buildings.



Key Benefits of Spray Systems



Excellent Insulating Performance



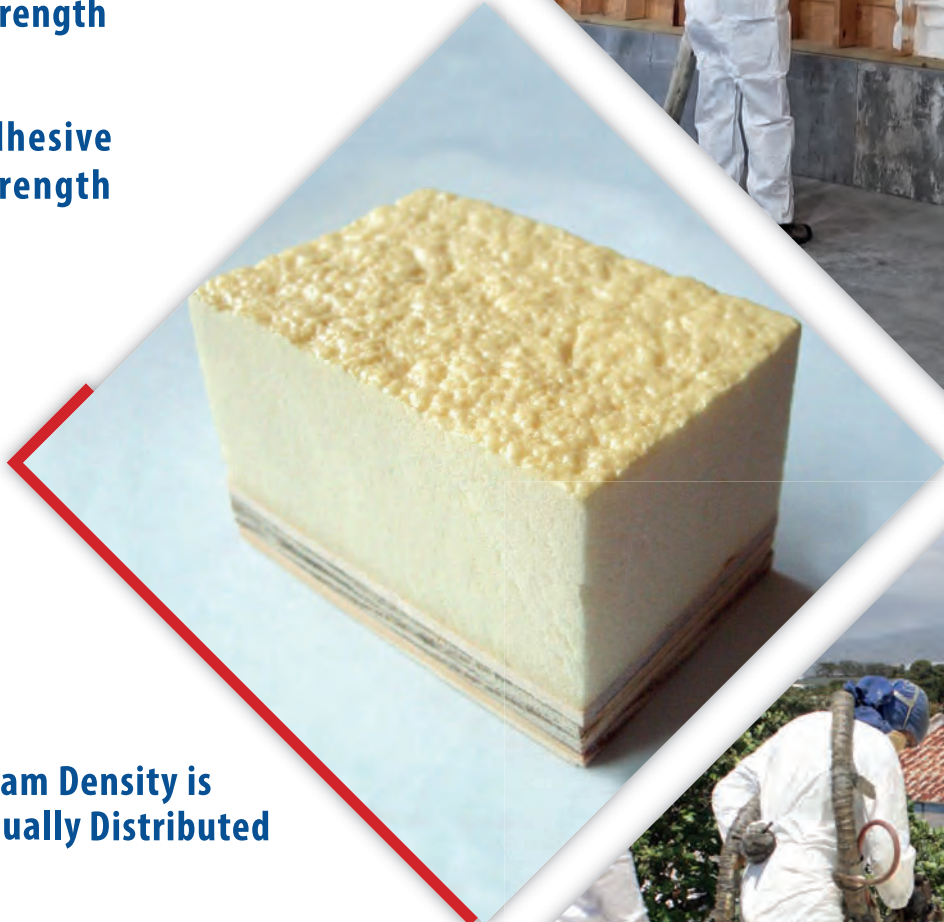
Low Thermal Conductivity



High Compressive Strength



Adhesive Strength



Foam Density is Equally Distributed



Adjustable at Reaction and Density of Foam



Low Water Absorption



Green & Environment Friendly Products



Technical Specification

Typical Formula	Spray System HPSP3040	Water Based Spray HP-SP-W-3040	Water Based Low Density HP-SP-3040(WLD)	Spray PIR HP-SP-PIR-3040(B2)	Open Cell Form HP-SPWOC-3040	
Property						
Viscosity at 25°C cps	200 ± 50	350 ± 50	350 ± 50	200 ± 50	500 ± 50	
Water Content (%)	1.00 ± 0.10	1.50 ± 0.20	1.80 ± 0.10	Nil	17.7 ± 0.10	
Machine Mix Reactivity						
Component Temperature,0°C	35	35	35	35	35	
ISO/Blended Polyol	100/100	100/100	100/100 (1:1.1)	100/100	100/100	
Cream Time, sec	< 5	< 5	< 5	< 5	< 5	
Gel Time, sec	<10	<12	<10	<10	<10	
Free Rise Density´ kg/m ³	30 ± 1.0	40 ± 2.0	32 ± 1.0	38 ± 2.0	10 ± 2.0	
Typical Physical Properties						
Core Density (kg/m ³)	45 ± 2.0	53 ± 2.0	45 ± 2.0	55 ± 2.0	10 ± 2.0	
Compressive Strength (kPa)	250 ± 50	300 ± 50	250 ± 50	300 ± 50	--	
Dimensional Stability (-30°C, 48hr), %	<1	<1	<1	<1	<3.8	
@23 °C Thermal Conductivity (mW/m.K)	21.0 ± 0.50	25.0 ± 0.50	25.0 ± 0.50	21.0 ± 0.50	26.0 ± 0.50	
Flammability	B3	B3	B3	B2	B3	
R Value (m ² K/W)	50 mm	2.294	2.000	2.000	2.294	1.667
	100 mm	4.587	4.000	4.000	4.587	3.333



This system is a "GREEN" and Environment Friendly product with ODP= 0 and GWP = 1



Research & Development

We at TSSC maintain stringent quality controls and our state-of-the-art laboratory is equipped for analytical and physical testing for base raw materials, blended systems and finished products for end users.

Our testing lab performs various tests on the polyurethane systems and its end products to ensure they meet and exceed international standards for quality, durability, and physical characteristics. This ensures the polyurethanes manufactured at TSSC are not compromised.

Chemical Testing:

- Viscosity
- OH values
- Acid and water content
- Reactivity reaction profile of the blended system

Foam Mechanical Testing:

- Adhesion test
- Compression strength
- Dimension stability
- Density
- Thermal conductivity
- Reaction to fire – Single flame fire test
- Open / Close cell content of the foam
- Additional physical characteristics of the polyurethane products that are tested include
 - Temperature effect
 - Overall color
 - System weight



DCL Approved Certificates


Dubai Central Laboratory
Construction Materials Laboratory Section - Structural Unit
TEST REPORT
APPARENT DENSITY

Report No:	100365299	Request No:	EMTX-2019-009133
Project No:	PS-1601	Report Date:	04/03/2019
Project Name:	TESTING SERVICE FOR TECH. SUPPLY & SERVICES CO.		
Consultant:	NA		
Contractor:	TECHNICAL SUPPLIES AND SERVICES CO LLC		
Location:	TSSC DIP		
Source:	TECHNICAL SUPPLIES & SERVICE CO. LTD.-DIP		
Sample Description:	SPRAY APPLIED RIGID CELLULAR POLYURETHANE INSUL.		
Sampling Date/Time:	25/01/2019 10:00 AM	Lot Number:	NA
Receiving Date/Time:	11/02/2019 11:45 AM	Lot Size:	NA NA
Sample Size:	10 pieces	Sender No:	LB-1
Material/Mix type:	NA	Laying Date/Production Date:	25/01/2019
Nominal Size / Working Block Size L * T * H (mm) :	1000*500*50		

PARAMETERS	RESULTS				
SAMPLE TYPE	HPS-SPRAY POLYURETHANE FOAM INSULATION				
SUPPORT / FACING	NIL				
NOM. THICKNESS (mm) :	50				
NOM. DENSITY (kg/m ³) :	40				
SPECIFICATION LIMIT (kg/m ³)	NG				
SPECIMEN NOM. LENGTH (mm)	1000				
SPECIMEN NOM. WIDTH (mm)	500				
SPECIMEN NOM. THICKNESS (mm)	50				
PRE-COND. TEMP. RH & DURATION	23 deg C, 50% RH & 48 Hr.				
TEST TEMPERATURE & RH	23 deg C, 50% RH				
SPECIMEN NO.	1	2	3	4	5
MEASURED DENSITY (kg/Cubic m)	48.5	45.5	47.0	45.0	48.5
AVG. APPARENT DENSITY (kg/Cubic m)	47.1				

Sampled By:	Ivove Bains	Tested By:	NIMAH
Samples Brought By:	Love Bains	Testing Date:	13/02/2019 09:37 AM
Sampling Method:	NOT GIVEN	Sampling Report No:	
Test Method:	BS EN 1602: 2013	Test Method Variation:	NIL
Remarks:	THIS REPORT REPRESENTS THE SUBMITTED SAMPLES ONLY.		

This Report is computer approved and authorized by Structural Unit
It does not require any signature



Doc. Ref: F-EM-0100
Issue Date: 03/10/2016
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Dubai Central Laboratory
Construction Materials Laboratory Section - Structural Unit
TEST REPORT
COMPRESSIVE STRENGTH/COMPRESSIVE STRESS AT 10% DEFORMATION

Report No:	100365302	Request No:	EMTX-2019-009133
Project No:	PS-1601	Report Date:	04/03/2019
Project Name:	TESTING SERVICE FOR TECH. SUPPLY & SERVICES CO.		
Consultant:	NA		
Contractor:	TECHNICAL SUPPLIES AND SERVICES CO LLC		
Location:	TSSC DIP		
Source:	TECHNICAL SUPPLIES & SERVICE CO. LTD.-DIP		
Sample Description:	SPRAY APPLIED RIGID CELLULAR POLYURETHANE INSUL.		
Sampling Date/Time:	25/01/2019 10:00 AM	Lot Number:	NA
Receiving Date/Time:	11/02/2019 11:45 AM	Lot Size:	NA NA
Sample Size:	10 pieces	Sender No:	LB-1
Material/Mix type:	NA	Laying Date/Production Date:	25/01/2019
Nominal Size / Working Block Size L * T * H (mm) :	1000*500*50		

PARAMETERS	RESULTS				
SAMPLE TYPE	HPS-SPRAY POLYURETHANE FOAM INSULATION				
SUPPORT / FACING	NIL				
NOM. THICKNESS (mm) :	50				
NOM. DENSITY (kg/m ³) :	40				
SPECIFICATION LIMIT (kg/m ³)	NG				
SPECIMEN NOM. LENGTH (mm)	1000				
SPECIMEN NOM. WIDTH (mm)	500				
SPECIMEN NOM. THICKNESS (mm)	150				
PRE-COND. TEMP. RH & DURATION	23+2deg C, 50+5% RH				
TEST CONDITION	23+2deg C, 50+5% RH				
SPECIMEN NO.	1	2	3	4	5
MEASURED DENSITY (kg/Cubic m)	46.8	46.8	46.0	47.9	47.8
INITIAL CROSS SECTIONAL AREA (mm ²)	22275.50	22550.00	22350.00	22800.75	22952.00
SPECIFIED DEFORMATION (%)	10	10	10	10	10
COMPRESSIVE STRESS @ SPECIFIED RELATIVE DEFORMATION (kPa)	277.3	282.9	300.1	298.0	277.2
AVERAGE COMPRESSIVE STRESS @ SPECIFIED RELATIVE DEFORMATION (kPa)	287.1				

Sampled By:	Ivove Bains	Tested By:	NIMAH
Samples Brought By:	Love Bains	Testing Date:	13/02/2019 09:37 AM
Sampling Method:	NOT GIVEN	Sampling Report No:	
Test Method:	BS EN 126: 1996	Test Method Variation:	NIL
Remarks:	THIS REPORT REPRESENTS THE SUBMITTED SAMPLES ONLY.		

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Dubai Central Laboratory
Construction Materials Laboratory Section - Structural Unit
TEST REPORT
DIMENSIONAL STABILITY UNDER SPECIFIED TEMPERATURE & HUMIDITY

Report No:	100429892	Request No:	EMTX-2019-052326
Project No:	PS-1601	Report Date:	04/07/2019
Project Name:	TESTING SERVICE FOR TECH. SUPPLY & SERVICES CO.		
Consultant:	NA		
Contractor:	TECHNICAL SUPPLIES AND SERVICES CO LLC		
Location:	TSSC-DIP		
Source:	TECHNICAL SUPPLIES & SERVICE CO. LTD.-DIP		
Sample Description:	POLYURETHANE RIGID BOARD		
Sampling Date/Time:	20/05/2019 10:00 AM	Lot Number:	NA
Receiving Date/Time:	26/05/2019 11:25 AM	Lot Size:	- NA
Sample Size:	6 pieces	Sender No:	L-01
Material/Mix type:	NA	Laying Date/Production Date:	19/05/2019
Nominal Size / Working Block Size L * T * H (mm) :	500*500*50 mm		

PARAMETERS	RESULTS		
SAMPLE TYPE	BLENDED SPRAY POLYOL HPSP3040		
SUPPORT / FACING	NIL		
NOM. THICKNESS (mm) :	50		
NOM. DENSITY (kg/m ³) :	40		
SPECIMEN NOMINAL LENGTH (mm)	200		
SPECIMEN NOMINAL WIDTH (mm)	200		
SPECIMEN NOMINAL THICKNESS (mm)	50		
PRE-COND. TEMP. RH & DURATION	23+2°C, 50+5% RH, 14 DAYS		
TEST TEMPERATURE (deg C)	70		
TEST RH (%)	90		
TEST DURATION (h)	48		
SPECIMEN NO.	1	2	3
CHANGE IN DIMENSION-LENGTH (%)	1.5	1.8	1.0
CHANGE IN DIMENSION-WIDTH (%)	1.6	2.0	1.2
CHANGE IN DIMENSION-THICKNESS (%)	4.0	3.4	4.6
MEAN DIMENSIONAL CHANGE IN % - LENGTH	1.4		
MEAN DIMENSIONAL CHANGE IN % - WIDTH	1.6		
MEAN DIMENSIONAL CHANGE IN % - THICKNESS	4.0		

Sampled By:	Ivove Bains	Tested By:	NIMAH
Samples Brought By:	Love Bains	Testing Date:	13/02/2019 09:37 AM
Sampling Method:	NOT GIVEN	Sampling Report No:	
Test Method:	BS EN 126: 1996	Test Method Variation:	NIL
Remarks:	THIS REPORT REPRESENTS THE SUBMITTED SAMPLES ONLY.		

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Dubai Central Laboratory
Construction Materials Laboratory Section - Structural Unit
TEST REPORT
THERMAL TRANSMISSION PROPERTIES BY HEAT FLOW METER (THERMAL COND)

Report No:	100365301	Request No:	EMTX-2019-009133
Project No:	PS-1601	Report Date:	04/03/2019
Project Name:	TESTING SERVICE FOR TECH. SUPPLY & SERVICES CO.		
Consultant:	NA		
Contractor:	TECHNICAL SUPPLIES AND SERVICES CO LLC		
Location:	TSSC DIP		
Source:	TECHNICAL SUPPLIES & SERVICE CO. LTD.-DIP		
Sample Description:	SPRAY APPLIED RIGID CELLULAR POLYURETHANE INSUL.		
Sampling Date/Time:	25/01/2019 10:00 AM	Lot Number:	NA
Receiving Date/Time:	11/02/2019 11:45 AM	Lot Size:	NA NA
Sample Size:	10 pieces	Sender No:	LB-1
Material/Mix type:	NA	Laying Date/Production Date:	25/01/2019
Nominal Size / Working Block Size L * T * H (mm) :	1000*500*50		

PARAMETERS	RESULTS	
SAMPLE TYPE	HPS-SPRAY POLYURETHANE FOAM INSULATION	
SUPPORT / FACING	NIL	
NOM. THICKNESS (mm) :	50	
NOM. DENSITY (kg/m ³) :	40	
SPECIFICATION LIMIT	NG	
TEST METHOD VARIATION	NIL	
TYPE OF MATERIAL USED FOR CALIBRATION	STANDARD REFERENCE MATERIAL 1450C587	
R VALUE @ 35deg C [(M2 K) / W]	0.7169	
DATE OF CERTIFICATION	10-DEC-2010 00:00:00	
SOURCE OF CERTIFICATION	National Institute of Standards & Technology (NIST) - U.S.A.	
EXPIRY & CERTIFICATION TEST NUMBER	Refer NIST special publication 250-130	
NOMINAL THICKNESS OF SPECIMEN (mm)	50.0	
TEMPERATURE, RH & TIME AT WHICH SPECIMEN CONDITIONED	35 deg C, 60%RH & 48hr.	
DATE OF CALIBRATION	18-FEB-2019 00:00:00	
MEAN TEMP.(SET) deg C	35	
TEMPERATURE DIFFERENCE (deltaT) deg C	20	
NO. OF HEAT FLUX TRANSDUCER USED	2	
TEST ARRANGEMENT	HORIZONTAL	
METERING (TEST) AREA	100mm X 100mm	
Uncertainty of measurement	REFER REMARKS	
TEST NO / SPECIMEN NO.	1/2	

Sampled By:	Ivove Bains	Tested By:	NIMAH
Samples Brought By:	Love Bains	Testing Date:	13/02/2019 09:37 AM
Sampling Method:	NOT GIVEN	Sampling Report No:	
Test Method:	BS EN 126: 1996	Test Method Variation:	NIL
Remarks:	THIS REPORT REPRESENTS THE SUBMITTED SAMPLES ONLY.		

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