High Performing Sustainable Wall Design

TWIGA DRYWALL ACOUSTIC INSULATION

Make Your Life Better Without Noise

TWIGA

insulating today for
a better tomorrow

Introduction

Twiga is the leading manufacturer of glass wool insulation in India having a thirty plus year track record of supplying domestic and export customers with world-class products for thermal and acoustic insulation.

An ISO 9001:2015 certified company, Twiga commenced its operations in 1979 and is a technology licensee of ISOVER Saint Gobain, the leading manufacturer of insulation worldwide. In 2014, Twiga received ISO 14001 and OHSAS 18001 certificates, international recognitions for environmental management systems and occupational health and safety.

Twiga's service and support is unmatched in the industry, with two manufacturing facilities located in Northern and Western India, seven marketing and support offices in each of the major Indian metros, and a national distribution network. As a result of Twiga's commitment to quality and reliability, Twiga Insul has been selected for many of India's most prestigious projects, ranging from national landmarks and government buildings to high profile commercial complexes.

Whether you need insulation for HVAC ducts, metal buildings, acoustics or any other purpose, we hope you will give us the opportunity to use our extensive experience for your benefit.

TWIGA - Drywall Acoustic Insulation

Twiga Drywall Acoustic Insulation is a lightweight resilient fiberglass wool insulation solution for drywall applications. The product has laminar fiber structure with interconnected air pockets. It helps to absorb transmitting sound/vibration inside the partition cavity and provide better acoustic isolation. The perfect balance of air and fiber combination determined by light density and uniform fiber distribution helps the product to achieve high acoustic isolation and high thermal resistance.

Acoustic performance of a drywall depends on the synergic performance of each of the system components. The drywall works as a 'Mass-Spring-Mass' concept. 'Mass' is the isolator which helps to reflect incidental sound energy. The remaining vibration that tends to get transmitted is mostly absorbed by resilient 'Spring'. Thus the whole system works in tandem to cut down the sound transmission.

In a standard drywall, dense and thin boards on both side of the stud act as 'Mass' or isolators and resilient fiberglass wool insulation filled in the cavity act as 'Spring' or absorber.

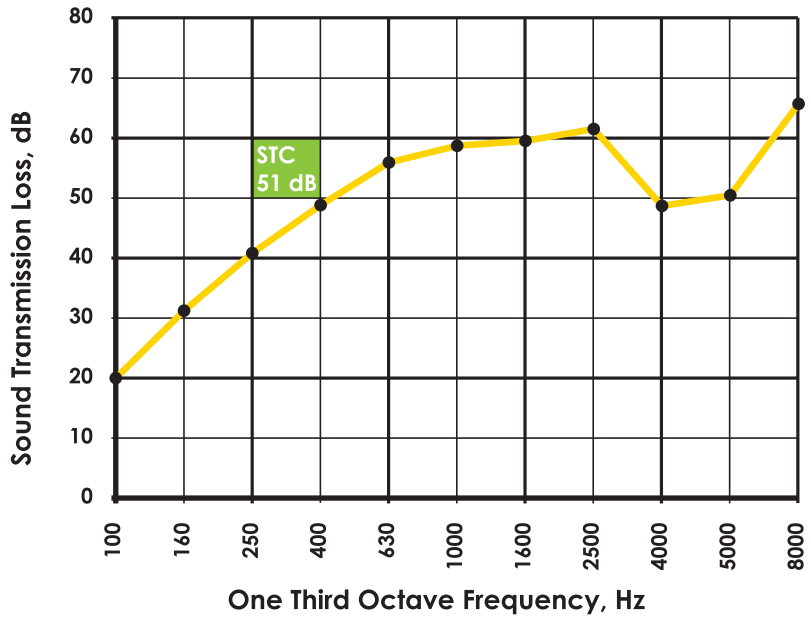
Advantages

- Lightweight, resilient and non settling pure insulation product suitable for long productive life.
- High performing insulation products which deliver acoustic isolation at one third of the density or weight of nearest competitive material.
- Comply to green building or sustainability standards. Twiga fiberglass wool is GRIHA/SVAGRIHA certified and also included in IGBC's green product directory.

Drywall Partition Systems

67 mm Thick Drywall Partition System

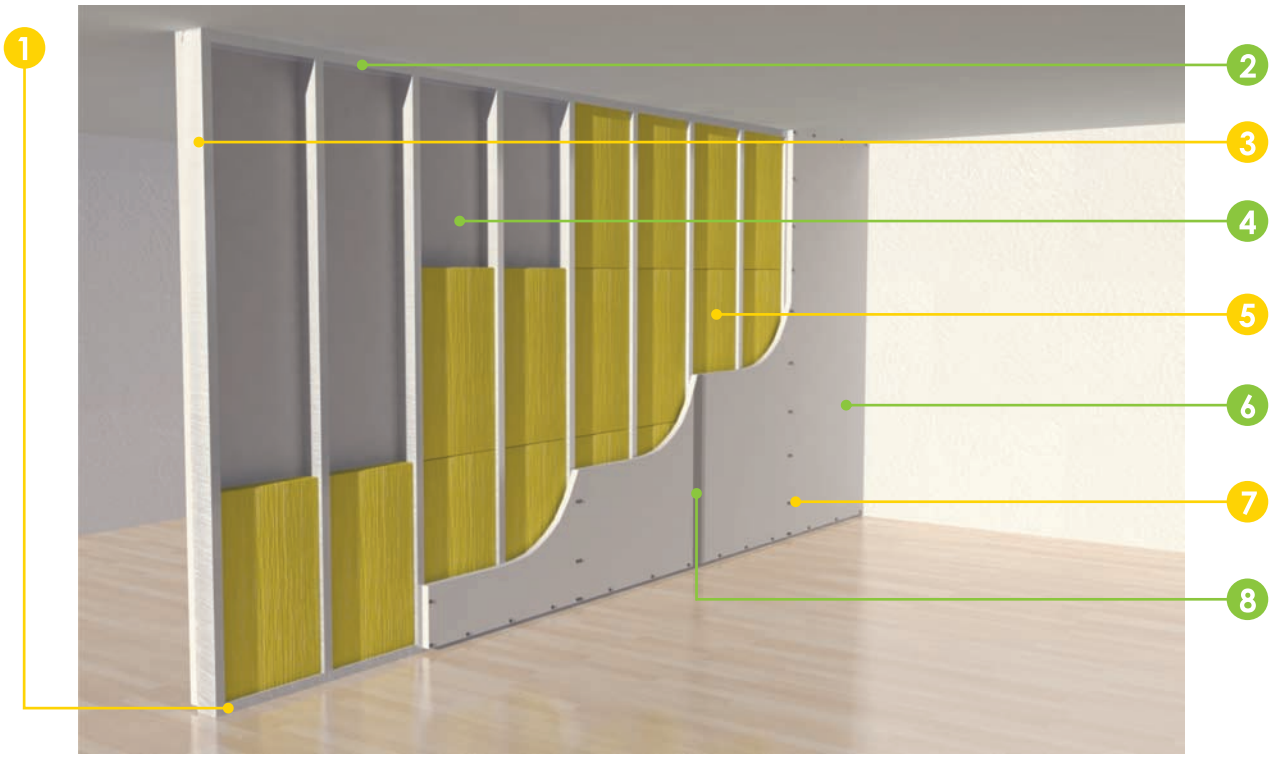
1. 51 mm GI Floor Channel
2. 51 mm GI Ceiling Channel
3. 51 mm GI Wall Stud
4. 8 mm Fiber Cement Board (1250 kg/m³ Density)
5. 50 mm TWIGA Fiberglass Wool Acoustic Insulation (20 kg/m³ Density)
6. 8 mm Fiber Cement Board (1250 kg/m³ Density)
7. Drywall Screws
8. Jointing Tape



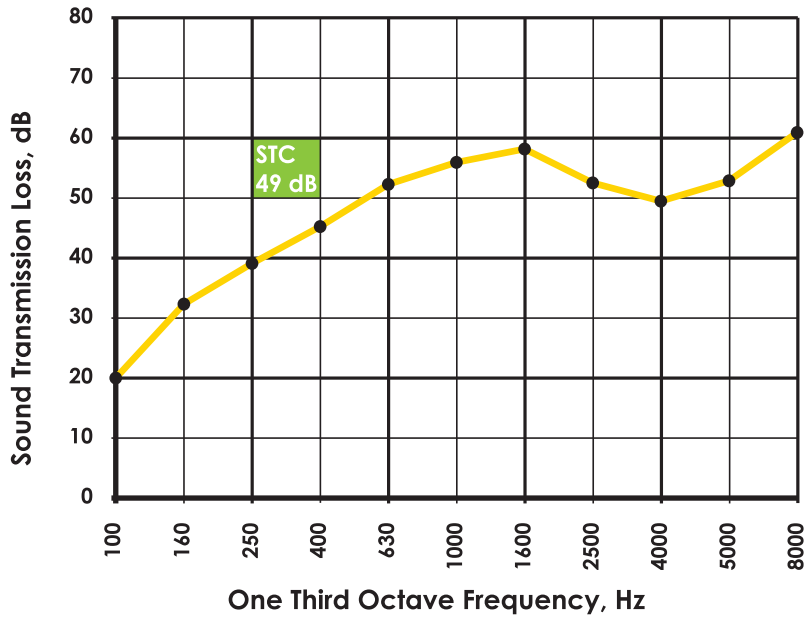
Sound transmission loss of 67 mm thick drywall partition system with glasswool insulation of 20 kg/m³ density and 50 mm thickness at one third octave frequencies

Drywall Partition Systems

97 mm Thick Drywall Partition System



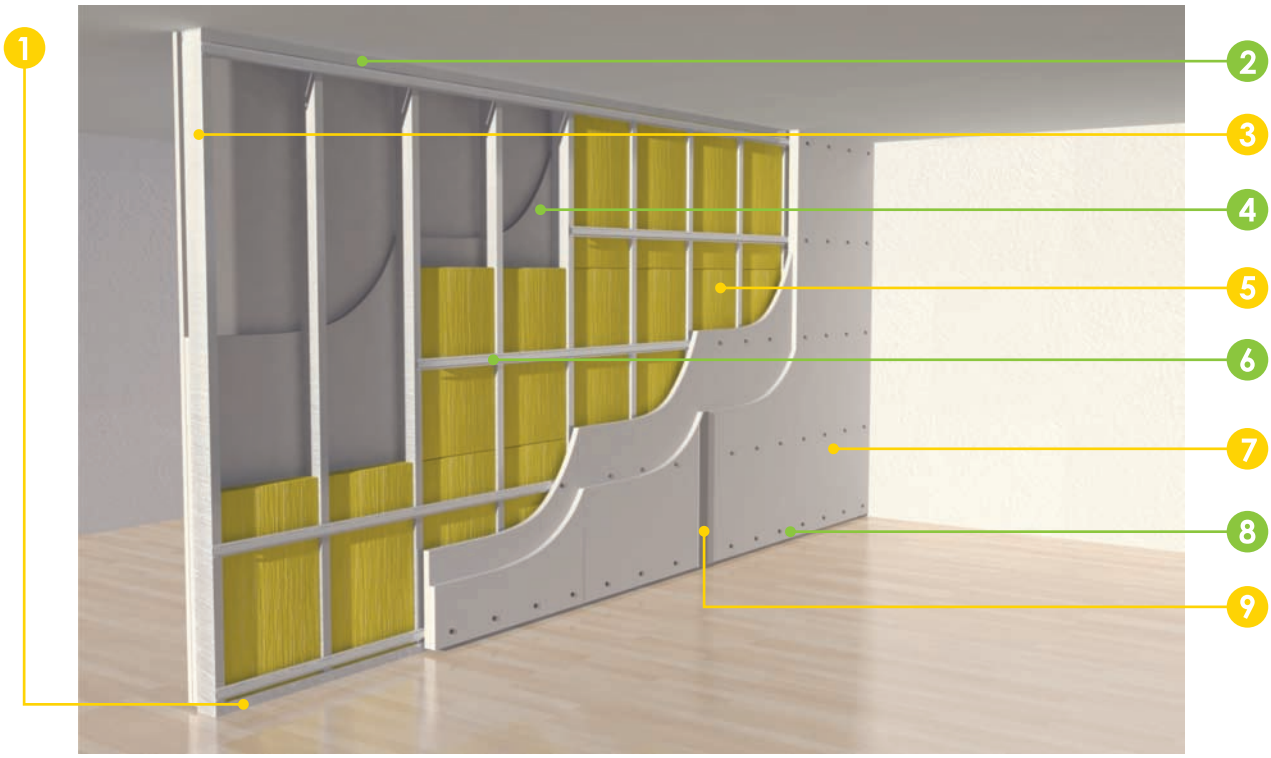
1. 72 mm GI Floor Channel
2. 72 mm GI Ceiling Channel
3. 70 mm GI Wall Stud
4. 12.5 mm Plain Gypsum Board (9 kg/m² Surface Density)
5. 50 mm TWIGA Fiberglass Wool Acoustic Insulation (20 kg/m³ Density)
6. 12.5 mm Plain Gypsum Board (9 kg/m² Surface Density)
7. Drywall Screws
8. Jointing Tape



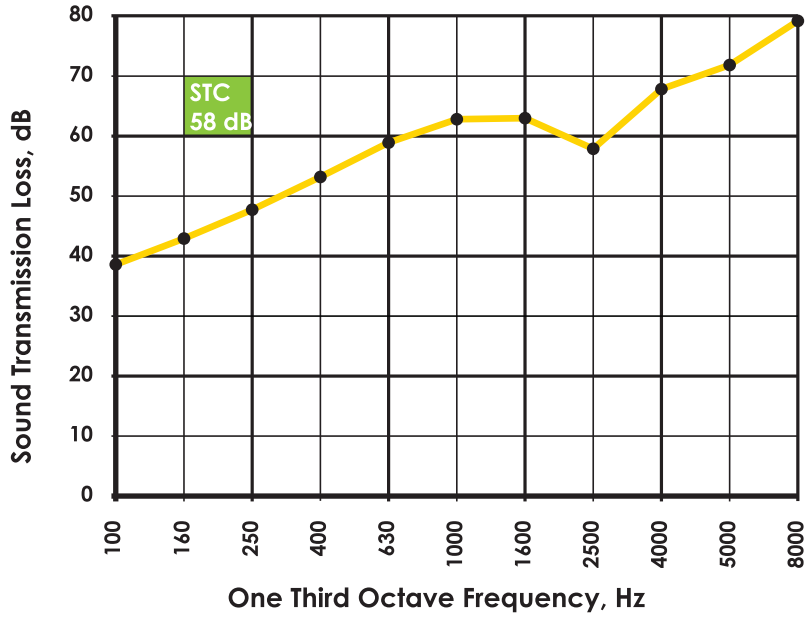
Sound transmission loss of 97 mm thick drywall partition system with glasswool insulation of 20 kg/m³ density and 50 mm thickness at one third octave frequencies

Drywall Partition Systems

148 mm Thick Drywall Partition System



1. 72 mm GI Floor Channel
2. 72 mm GI Ceiling Channel
3. 70 mm GI Wall Stud
4. Two Layers of 15 mm Fire Board (13.5 kg/m² Surface Density)
5. 50 mm TWIGA Fiberglass Wool Acoustic Insulation (20 kg/m³ Density)
6. Resilient Bar
7. Two Layers of 15 mm Fire Board (13.5 kg/m² Surface Density)
8. Drywall Screws
9. Jointing Tape



Sound transmission loss of 148 mm thick drywall partition system with glasswool insulation of 20 kg/m³ density and 50 mm thickness at one third octave frequencies

Product Specification

Twiga Drywall Insulation	Density	Thickness
Twiga Insul, TI 750/50	12 Kg/m³	50 mm
Twiga Insul, TI 1000/25, TI 1000/50	16 Kg/m³	25mm, 50 mm
Twiga Insul, TI 1250/25, TI 1250/50	20 Kg/m³	25mm, 50 mm

Some more acoustic partition system with Twiga drywall insulation products

97 mm Thick Drywall Partition System	Construction Element	Tested STC/Rw Value	Insulation Product Code
Outer Board	12.5 mm Gypsum Board	STC-43, Rw-45	TI 750/50
Stud	70 mm		
Twiga Fiberglass Wool Insulation (Installed in the Stud Cavity)	Density: 12 Kg/m³ Thickness: 50mm		
Inner Board	12.5 mm Gypsum Board		

200 mm Thick Drywall Partition System	Construction Element	Tested STC/Rw Value	Insulation Product Code
Outer Board - Double Layer	12.5 mm Gypsum Board x 2	STC-56, Rw-56	TI 1250/50
Twin Stud with Air Gap	70 mm x 2		
Twiga Fiberglass Wool Insulation (Installed in only one of the Stud Cavity)	Density: 20 Kg/m³ Thickness: 50mm		
Inner Board - Double Layer	12.5 mm Gypsum Board x 2		

163 mm Thick Drywall Partition System	Construction Element	Tested STC/Rw Value	Insulation Product Code
Outer Board - Double Layer	12.5 mm Gypsum and 8 mm Cement Board	STC-58, Rw-58	TI 1250/50
Twin Stud with Air Gap	51 mm x 2		
Twiga Fiberglass Wool Insulation (Installed In only one of the Stud Cavity)	Density: 20 Kg/m³ Thickness: 50mm		
Inner Board - Double Layer	12.5 mm Gypsum and 8 mm Cement Board		

Environment friendly and non hazardous product

Sl. No.	Green Building Product Assessment Parameters	Type of Criteria	Test Result/ Conformance	Test Lab
1	Emission Parameter - Total Volatile Content (TVOC)	Mandatory	Pass/Conform	PSB Singapore
2	Emission Parameter - Phthalates	Mandatory	Pass/Conform	PSB Singapore
3	Emission Parameter - Formaldehyde	Mandatory	Pass/Conform	PSB Singapore
4	Emission Parameter - 4 - Phenylcyclohexene	Mandatory	Pass/Conform	PSB Singapore
5	Hazardous Substance – Halogenated Solvent, Aromatic Solvent	Mandatory	Not Detected/ Conform	PSB Singapore
6	Hazardous Substance – Mercury, Lead, Hexavalent Chromium	Mandatory	Not Detected/ Conform	PSB Singapore
7	Hazardous Substance – Ozone Depleting Substances	Mandatory	Not Detected/ Conform	PSB Singapore
8	Hazardous Substance – Tin	Mandatory	Not Detected/ Conform	PSB Singapore
9	Hazardous Substance – Phthalates	Mandatory	Not Detected/ Conform	PSB Singapore
10	Hazardous Substance - Halogenated Binding Agent and Halogenated Flame Retardant, Polybrominated Biphenyls, Polybrominated Diphenyl Ethers and Short Chain Paraffins	Mandatory	Not Detected/ Conform	PSB Singapore
11	Hazardous Substance – Asbestos	Mandatory	Not Detected/ Conform	PSB Singapore

Thermal performance of Twiga drywall insulation for building envelope / external wall and roof

Insulation Product in Drywall Construction for Envelope Wall or Roof	Thermal Conductivity (w/m.k)	Thermal Resistance $m^2.K/W$	Thermal Transmittance for System (U-value in w/sq.m.k)
Twiga Insul, TI 750/50, Double Layer	K-0.041	R-1.2 x 2 layer = R-2.4	U < 0.41
Twiga Insul, TI 1000/50, Double Layer	K-0.039	R-1.28 x 2 layer = R-2.56	U < 0.39
Twiga Insul, TI 1250/50, Double Layer	K-0.036	R-1.38 x 2 layer = R-2.78	U < 0.35

Fire Performance of Twiga Drywall Acoustic Insulation

The basic fiberglass wool insulation manufactured by Twiga is non combustible and a fire safe product. It complies with stringent international fire codes. Some details of the fire certifications are mentioned below.

Fire Test	Test Result	Testing Standards	Test Lab/Approving Authority
Non Combustibility	Non Combustible	BS 476 Part 4	PSB Singapore
Reaction to Fire	A 1 (Best Class)	EN 13501 -1	PSB Singapore
Ignitibility	Designated as 'P'	BS 476 Part 5	PSB Singapore
Fire Propagation	Total Index, I<12 Sub Index, i_1<6	BS 476 Part 6	PSB Singapore
Surface Spread of Flames	Class 1	BS 476 Part 7	PSB Singapore
Class 0 as in The Building Regulation 2000*	Class 0	BS 476 Part 6 & 7	PSB Singapore
Toxic Fume**	<1	BS 6853 Annex B.2	Exova Warringtonfire
Smoke Density**	<1	BS 6853 Annex D.8.4	Exova Warringtonfire
FM Approval	Approved for Metal Building	Class No. 4880. Approval Standard for Class 1 Fire Rating of Insulated Wall, Roof/ceiling, and Exterior Wall System	FM Approvals, Member of FM Global Group

*Class 0 is not a classification identified in any British Standard test, but it is the highest national product performance classification for lining material described in the said regulation document for England and Wales.

**Test done on faced insulation products suitable for external dry wall system for thermal applications.

Other General Characteristic of Twiga Fiberglass Wool Insulation

General parameters and features	Details	Complying Standards
Biological	Inorganic. Does not encourage growth of fungi and vermin	IS 8183/IS 3144
Recovery after compression	>95%	IS 8183
Moisture content, absorption	< 2%, Hydrophobic in nature	IS 8183/IS 3144
Vibration and jolting	Does not settle in vertical cavity	IS 8183/IS 3144
Non corrosive	Free from sulphur and chloride content	IS 8183

Products Standards

Twiga Products	Standards
Fiberglass wool insulation	IS 8183
Preformed pipe sections	IS 9842
Fiberglass Tissue	AWWA(203-2008), IS 7193, IS 14695, IS 15337

Certifications

ISO 14001:2015

QS
QUALITY SERVICE

CERTIFICATE

Certificate no. 10880

TWIGA

U. P. Twiga Fiberglass Ltd
H.O.: Twiga House, 3 CC, East of Kailash, New Delhi
Unit-1: 9, Sikandrabad Ind. Area, Bulandshahr Dist., UP
Unit-2: N-40, Addl.Ambernath MIDC, Ambernath
Dist. Thane, Maharashtra

QS Zürich AG certifies that the Management System of the above mentioned company has been evaluated and meets the requirements established by the following rules:

ISO 14001: 2015

The management system includes:

Manufacture & Supply of glass wool products and fiberglass tissue

During the period of validity of this certificate, the management system of the company must always comply with the requirements of the certified standards.

For updated amendments within the scope of certification of the present certificate, please refer to http://www.quality-service.ch/

First certification date: 24.07.2014
Date of issue: 03.08.2017
Expiration date: 23.07.2020
Subject to successful surveillance audit

QS ZÜRICH AG
P.O. Box 6335
CH-8050 Zürich
info@quality-service.ch

Management

OHSAS 18001:2007

QS
QUALITY SERVICE

CERTIFICATE

Certificate no. 10881

TWIGA

U. P. Twiga Fiberglass Ltd
H.O.: Twiga House, 3 CC, East of Kailash, New Delhi
Unit-1: 9, Sikandrabad Ind. Area, Bulandshahr Dist., UP
Unit-2: N-40, Addl.Ambernath MIDC, Ambernath
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QS ZÜRICH AG
P.O. Box 6335
CH-8050 Zürich
info@quality-service.ch

Management

ISO 9001:2015

BUREAU VERITAS
Certification

U.P.TWIGA FIBREGLASS LIMITED

TWIGA

HEAD OFFICE: TWIGA HOUSE, 3 COMMUNITY CENTRE, EAST OF KAILASH, NEW DELHI – 110 065, INDIA.

This is a multi-site certificate, additional site details are listed in the appendix to this certificate

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System standard detailed below.

Standard

ISO 9001:2015

Scope of certification

HEAD OFFICE :SALES AND MARKETINIG OF GLASS WOOL INSULATION PRODUCTS, FIBERGLASS TISSUES AND PROCUREMENT OF MATERIALS

WORKS: MANUFACTURE AND SUPPLY OF GLASS WOOL INSULATION PRODUCTS AND FIBERGLASS TISSUES FOR DOMESTIC & EXPORT MARKET

Original cycle start date: 29 October 2008
Expiry date of previous cycle: 28 October 2017
Recertification Audit date: 12 September 2017
Recertification cycle start date: 10 October 2017

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 28 October 2020

Certificate No. IND17.5863U/Q Version : 1 Revision date: 10 October 2017

Signed on behalf of BVCH SAS – UK Branch
Ramesh KOREGAVE
Director, CERTIFICATION
South Asia Region

UKAS
0008

Certification body address: 5th Floor, 66 Prescot Street, London, E1 8HG, United Kingdom.

Local office: Bureau Veritas (India) Private Limited (Certification Business) "Manish Centre" 6th Floor, Kinshanlal Marwah Marg, Opp. Amar Industrial Estate, Off Saki Vihar Road, Andheri (East), Mumbai – 400 072, India

Pg 1 of 2

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call +91 22 6695 6300.

ISO 9001:2015

BUREAU VERITAS
Certification

Appendix to the certification

U.P.TWIGA FIBREGLASS LIMITED

TWIGA

Standard

ISO 9001:2015

Scope of certification

HEAD OFFICE : SALES AND MARKETING OF GLASS WOOL INSULATION PRODUCTS AND PROCUREMENT OF MATERIALS

SITE	ADDRESS	SCOPE
FACTORY (SIKANDRABAD)	M, SIKANDRABAD INDUSTRIAL AREA, BULANDSHAHR – 203 205, UTTAR PRADESH, INDIA.	MANUFACTURE AND SUPPLY OF GLASS WOOL INSULATION PRODUCTS AND FIBERGLASS TISSUES FOR DOMESTIC & EXPORT MARKET
FACTORY (AMBERNATH)	N-40, ADDITIONAL AMBERNATH INDUSTRIAL AREA, MIDC, SHIL-BADLAPUR ROAD, AMBERNATH (EAST), THANE – 421 506, MAHARASTRA, INDIA.	MANUFACTURE AND SUPPLY OF GLASS WOOL INSULATION PRODUCTS FOR DOMESTIC & EXPORT MARKET

Certificate No. IND17.5863U/Q Version: 1 Revision date: 10 October 2017

Signed on behalf of BVCH SAS – UK Branch
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Pg 2 of 2

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organization. To check this certificate validity please call +91 22 6695 6300.

TWIGA
insulating today for
a better tomorrow

Pipe Section and Lamella

High Thermal Resistance

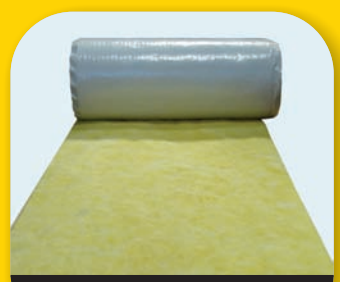
FlexibleDuct

A licensee of ISOVER Saint-Gobain

Member of Singapore Green Building Council

PEB Insulation with GlassWool

High Acoustic Properties



GlassWool Roll

Facade insulation

TWIGA INSUL
BUILDING SOLUTIONS

Fire Safe Insulation

Indian Green Building Council
FOUNDING MEMBER

CavityWall Insulation with GlassWool

Environment Friendly Green Building Product

GlassWool Duct Board

Dry-Wall Insulation

Time Tested Proven Insulation

Underdeck Insulation

Product Certified by GRIHA

GRIHA

TWIGA

insulating today for
a better tomorrow

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