



# ***U PROTECT***

Insulation system for passive fire protection  
in HVAC applications

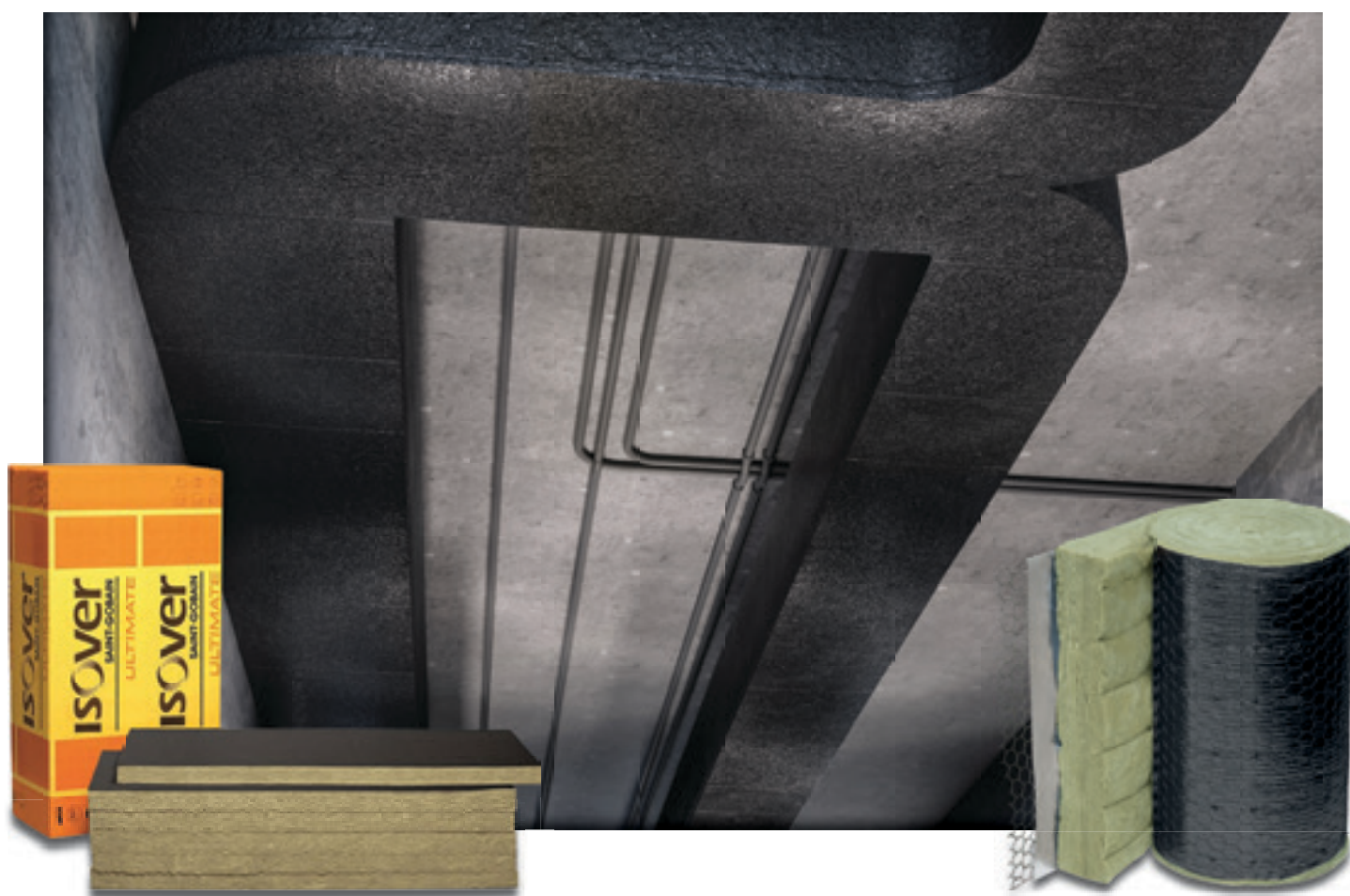


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Isover is a market leading manufacturer of high performing acoustic and thermal insulation solutions. Manufacturing in the UK since 1979, we have a long history of providing innovative, sustainable and reliable insulation products and solutions to enhance the performance of buildings and create great living and working spaces.

## **Manufacturing Standards and Certifications**

We are committed to the safety, quality and sustainability of our products and manufacturing sites. Therefore we hold and maintain the following standards and certificates:

- **Safety**

To guarantee safety in use, our insulation products are EUCB certified. This certifies the conformity of our products with Note Q of Regulation (EC) N° 1272/2008.

- **Quality and Management Systems**

Most of our insulation manufacturing plants are certified to the ISO 9001 Quality Management system.

- **Environmental and Sustainability**

Most of our insulation manufacturing plants are certified to the ISO 14001 Environmental Management System. Our Runcorn manufacturing plant is certified to BES 6001 for responsible sourcing. The vast majority of our structural insulation products manufactured at our Runcorn plant achieve the Eurofins 'Gold' standard for indoor air quality.

- **EPDs**

We have EPDs for key products including Climcover.

- **CE Marking**

Our HVAC product ranges are CE marked in accordance to EN 14303. Our thermal insulation products (and the vast majority of our acoustic insulation products) are CE marked in accordance with BS EN 13162 (Thermal insulation products for buildings. Factory made mineral wool (MW) products. Specification) and EN 13172 (Thermal insulating products. Evaluation of conformity).



# U Protect passive fire protection system

A critical risk to address when designing a building is the potential spread of fire within HVAC systems from one compartment to another. Effective fire protection of metal ductwork is the best way to help ensure fire safety of ventilation, kitchen and smoke extraction ducts in a building.

The innovative U Protect system has been tested under EN 1366-1 & EN 1366-8 and assessed against BS 476: Part 24. It offers up to 2 hours passive fire protection in HVAC ventilation and smoke extract ducts as well as 1 hour passive fire protection for kitchen ducts.

## System details

### U Protect slabs and wired mats

U Protect slabs and wired mats are made from ULTIMATE™ mineral wool insulation. ULTIMATE™ is produced using an exclusive, patented process, which ensures a shot-free product, made of long interwoven fibres.

This ensures the U Protect slabs and wired mats have excellent fire protection, thermal performance and a significantly reduced weight when compared to traditional stone wool solutions.



The slabs and wired mats feature a black aluminium foil facing for a professional, neat finish and to differentiate from standard HVAC insulation.



### U Protect accessories

To ensure effective fire protection and straightforward installation, a full range of accessories is available, including intumescent paint, glue, screws and tape.



*The accessories referred to above are integral to the U Protect passive fire protection system as they have been tested and assessed alongside U Protect wired mats and slabs in achieving the published fire performance according to EN 1366-1, EN 1366-8 and BS 476: Part 24 for ventilation, kitchen and smoke extract ducts. The fire performance of the system may not be substantiated if alternative system components are used. The products must be installed in accordance with the U Protect Installation Guide available on [www.isover.co.uk/UProtect](http://www.isover.co.uk/UProtect)*



# U Protect passive fire protection system

## Features and Benefits



The U Protect system has been tested under EN 1366-1 & EN 1366-8 and assessed against BS 476: Part 24. It offers up to 2 hours passive fire protection in HVAC ventilation and smoke extract ducts as well as 1 hour passive fire protection for kitchen ducts.



The U Protect slabs and wired mats have a Euroclass A1 fire rating when classified according to BS EN 13501-1.



The U Protect slabs and wired mats are lighter than stone wool alternatives, ensuring ease of handling and installation. The products can be efficiently stored with up to 129m<sup>2</sup> of insulation per pallet.



The inherent sound deadening properties of the ULTIMATE™ mineral wool insulation will help to reduce noise from ductwork, improving the acoustic comfort of those living or working within the building.



The system can be used to meet thermal building regulations to BS 5422:2009 and offers energy savings by protecting the installation from external thermal variation.

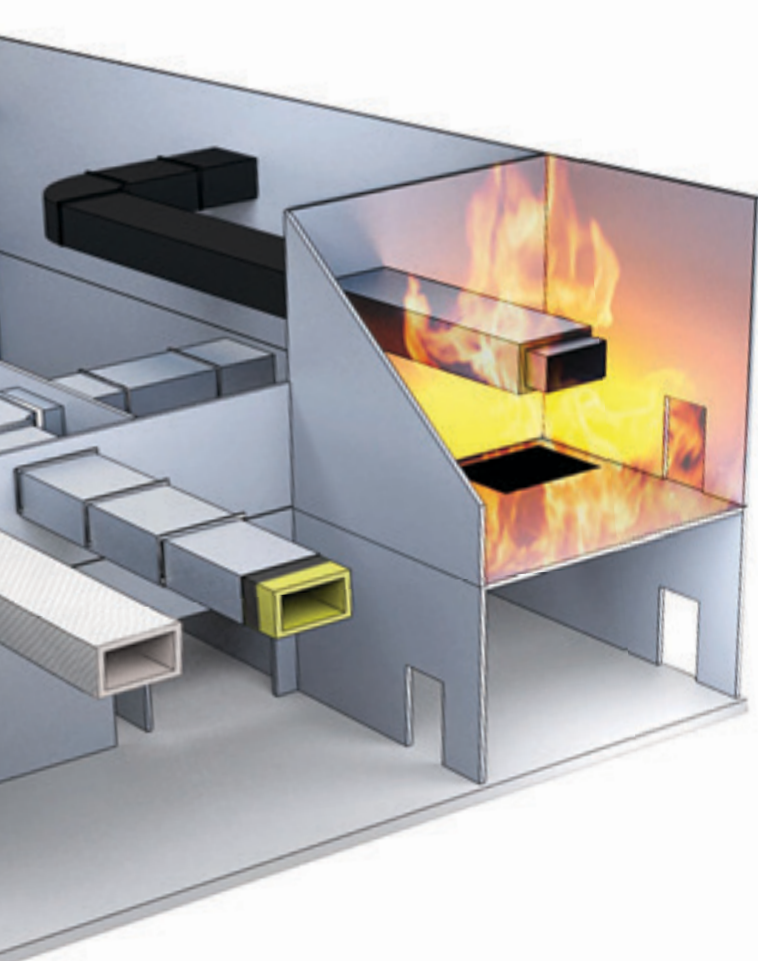


The lightweight slabs and wired mats are easy to handle and provide maximum flexibility and mechanical performance, allowing fast and efficient cutting and fitting using standard knives. A full range of accessories is available to help ensure effective fire protection and straightforward installation.

The adhesive used in the system is only required at penetration details rather than at every insulation joint, resulting in further cost and time saving during installation.



# Effective passive fire protection



## The U Protect system offers fire protection solutions for the following applications:

- Circular and rectangular ductwork
- Vertical and horizontal ductwork
- Fire locations inside (duct B) and outside (duct A) the ductwork
- Smoke extract (duct C)

## Resistance to fire

Any product used in HVAC for fire protection needs to be tested to EN 1366-1 and EN 1366-8 in order to define the time it resists fire (i.e. the time it will take for a fire to penetrate the insulated duct or otherwise impair the correct functioning of the duct.)

***The U Protect system has been tested under EN 1366-1 & EN 1366-8 and assessed against BS 476: Part 24. It offers up to 2 hours passive fire protection in HVAC ventilation and smoke extract ducts as well as 1 hour passive fire protection for kitchen ducts.***

## Reaction to fire

Euroclass is the harmonised European classification system for products, relating to their reaction to fire performance.

***U Protect slabs and wired mats achieve a Euroclass A1 rating, the highest attainable fire classification.***

## Class 0 compliance

Class 0 compliance refers to the surface properties of a product, specifically 'Surface Spread of Flame' or 'non-combustibility' of the surface. BS 476: Parts 6 and 7 also need to be satisfied.

***The U Protect system is Class 0 compliant.***

*All documentation and reports related to these tests are available on request from your local Technical Sales Manager. Please consult [www.isover.co.uk/hvac](http://www.isover.co.uk/hvac) for contact details.*



# Specification of the U Protect system

Before the U Protect system can be correctly specified, the application, duct characteristics and the performance requirements of the finished duct system must be known.

## U Protect thickness tables

Once the performance requirements and duct details are known, the following tables should be used to determine the correct thickness of U Protect.

	Ventilation	Kitchen extract	Smoke extract
Shape	Circular or rectangular		
Orientation	Horizontal, vertical or both		
Fire location	Fire inside (Duct A), fire inside (Duct b) or both	Duct A	Duct C
Fire resistance	15-120 minutes	30 or 60 minutes	15-120 minutes

## Ventilation ducts EN 1366-1

Rectangular ducts		EI60	EI20
Duct A - Outside	Horizontal	30 (40)	80
	Vertical	30	
Duct B - Inside	Horizontal	60 (70)	80 (90)
	Vertical	80	100

Circular ducts		EI60	EI20
Duct A - Outside	Horizontal	60	100
	Vertical		
Duct B - Inside	Horizontal	75 (80)	120
	Vertical	75	120

Number in brackets means the thickness in mm to use in case of lightweight partition walls.



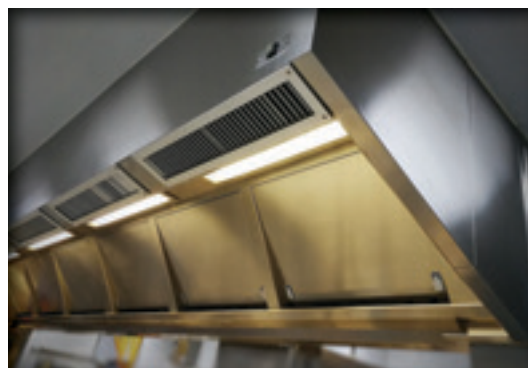
# Specification of the U Protect system

## Kitchen extract

### Duct A kitchen extract solution

Rectangular ducts	EI30	EI60
Horizontal	60	140
Vertical		

Circular ducts	EI30	EI60
Horizontal	60	135
Vertical		



## Smoke extract EN 1366-8

Smoke extraction ductwork (duct C).

Rectangular ducts	EI60	EI20
Horizontal	80	100
Vertical		

Circular ducts	EI60	EI20
Horizontal	75 (80)	120
Vertical		



Number in brackets means the thickness in mm to use in case of lightweight partition walls.

For further advice, please contact our Technical Support Team on **0115 945 1143** or email: [techinsulation@saint-gobain.com](mailto:techinsulation@saint-gobain.com)

Disclaimer: SAINT-GOBAIN ISOVER UK LIMITED has provided the guidance tables for general information only. This is not intended to form a contractual relationship between Isover and the recipient. It is the responsibility of the recipient to approve and co-ordinate the information provided by Isover before installation. This guidance should also be read in conjunction with current literature which can be found at [www.isover.co.uk/downloads](http://www.isover.co.uk/downloads). All materials, unless otherwise stated, shall be supplied by Isover and need to be installed in accordance with current manufacturer recommendations and construction industry standards.





# U Protect slabs and wired mats

U Protect slabs and wired mats are made from innovative ULTIMATE™ mineral wool that is lightweight, easy to install and combines all the advantages of conventional thermal and acoustic insulation with excellent fire performance.

The slabs and wired mats feature a black aluminium foil facing for a professional, neat finish and to differentiate from standard HVAC insulation. They are part of the U Protect system which has been tested under EN 1366-1 & EN 1366-8 and assessed against BS 476: Part 24. It offers up to 2 hours passive fire protection in HVAC ventilation and smoke extract ducts as well as 1 hour passive fire protection for kitchen ducts.<sup>(1)</sup>



## U Protect Slab 4.0 Alu1 (Black)

### Product Specification

Product code	Thickness (mm)	Width (mm)	Length (mm)	Slabs per pack	m <sup>2</sup> per pack	Packs per pallet	Weight per slab (kg)	Weight per m <sup>2</sup> (kg)	m <sup>2</sup> per pallet
5200680826	60	600	1200	6	4.3	12	3.2	4.4	51.84
5200680828	80	600	1200	5	3.6	12	4.2	5.8	43.20
5200680829	90	600	1200	4	2.9	12	4.8	6.6	34.56
5200680830	100	600	1200	4	2.9	12	5.2	7.3	34.56

### Thermal Conductivity

Mean temp °C	10	50	100	150	200	300	400
Declared thermal conductivity (W/mK)	0.031	0.035	0.040	0.047	0.054	0.072	0.096

## U Protect Wired Mat 4.0 Alu1 (Black)

### Product Specification

Product code	Thickness (mm)	Width (mm)	Length (mm)	Mats per pack	m <sup>2</sup> per pack	Packs per pallet	Weight per pack (kg)	Weight per m <sup>2</sup> (kg)	m <sup>2</sup> per pallet
5200687131	50	600	6000	2	7.2	18	13.1	3.6	129.6
5200687132	60	600	5000	2	6.0	18	12.9	4.3	108
5200680831	75	600	4000	2	4.8	18	12.7	5.3	86.4
5200687133	80	600	3700	2	4.4	18	12.5	5.6	79.92
5200687134	100	600	3000	2	3.6	18	12.5	6.9	64.8
5200680832	120	600	2500	2	3.0	18	12.4	8.3	54

### Thermal Conductivity

Mean temp °C	10	50	100	150	200	300	400
Declared thermal conductivity (W/mK)	0.031	0.035	0.040	0.047	0.054	0.072	0.096

<sup>(1)</sup>: Fire resistance is dependant on the application, thicknesses used and method of installation. Please refer to the U Protect Installation Guide for details.



# U Protect accessories

To ensure effective fire protection and straightforward installation of the U Protect system, a full range of accessories is available, including intumescent paint, glue, screws and tape.



#### Protect BSF Intumescent Paint

Solvent free and pH neutral white, aqueous intumescent dispersion

#### Protect BSK Adhesive

Non-combustible, inorganic adhesive based on alkali sodium silicate

#### FireProtect Screws

Spiral shaped screws, made of stainless steel

#### Protect Black Tape

Self-adhesive aluminium tape

The accessories detailed below are integral to the U Protect passive fire protection system as they have been tested and assessed alongside U Protect Wired Mat 4.0 Alu1 (Black) and U Protect Slab 4.0 Alu1 (Black) in achieving the published fire performance according to EN 1366-1, EN 1366-8 and BS 476: Part 24 for ventilation, kitchen and smoke extract ducts.

The fire performance of the system cannot be substantiated if alternative system components are used.

#### Protect BSF Intumescent Paint

SKU number	Material Description	Delivery unit	Items per pallet	M.O.Q.
5200428879	Protect BSF Intumescent Paint 310ml tube	Box of 12 cartridges	52 boxes per pallet	1 box
5200428878	Protect BSF Intumescent Paint 15kg tub	15kg bucket	40 buckets per pallet	1 bucket

#### Protect BSK Adhesive

SKU number	Material Description	Delivery unit	Items per pallet	M.O.Q.
5200859462	Protect BSK Adhesive (310ml cartridges x 20)	Box of 20 cartridges	60 boxes per pallet	1 box
5200859461	Protect BSK Adhesive (8kg bucket)	8kg bucket	60 buckets per pallet	1 bucket

#### FireProtect Screws

SKU number	Material Description	Length	Unit per box	Items per pallet	M.O.Q.
5200428876	FireProtect Screws	140mm	500	12 boxes per pallet	1 box
5200428877	FireProtect Screws	200mm	200	24 boxes per pallet	1 box

#### Protect Black Tape

SKU number	Material Description	Width	Length	Rolls/pack	M.O.Q.
5200849112	Protect Black Tape	90mm	100m	20 rolls per box	1 box

# U Protect accessories



## Specification Table

	Protect BSK Adhesive	Protect BSF Intumescent Paint	Protect Tape	Fire Protect Screws
<b>Description</b>	Inorganic solvent free adhesive.	Highly thixotropic paint in water-based dispersion. When exposed to fire or heat, Protect BSF develops a microporous, insulating foam layer, protecting surfaces/areas from the influence of fire due to its low heat conductivity and the lack of oxygen.	Black aluminium tape with inorganic glue	Spiral galvanised steel screws. Fastener for fire protection insulation materials on HVAC ducts.
<b>Processing temperature</b>	Between 5°C and 30°C.	Between 5°C and 30°C.	Between 5°C and 30°C for installation. From - 40 to +130°C after installation.	
<b>Instructions for use</b>	Before use, the material must be stirred well. Application by brush, roller or spatula. The surface should be clean, dry and free of grease. Hardens after approximately 12 hours under normal conditions (20°C, 50%RH). Possible variations depending on site conditions.	Before use, the material must be stirred well. Can be diluted with up to 10% clean water. Application by brush, roller or spatula. The surface should be clean, dry and free of grease. Touch dry: after 4 hours under normal conditions, completely dry after 24 to 48 hours.	Surface must be dry and free of dust and grease. The use of a spatula is strongly recommended to apply this pressure sensitive tape. Particular attention should be paid to the ending points.	As instructed in the U Protect Installation Guide.
<b>Chemical behaviour</b>	Inorganic adhesive. Alkaline solution. Free of Volatile Organic Compounds (VOCs).	Solvent free, pH neutral, white, water-based dispersion. Free of Volatile Organic Compounds (VOCs).	Free of solvent, PVC, isocyanate and heavy metals. Water-resistant.	Galvanised steel
<b>Other characteristics</b>			Adhesion to steel: 10 N/cm. Tensile strength: 13N/cm. Elongation at break: 3%.	Tensile strength: 2060-2290 MPa. Diameter: Wire: 1.6mm & Head: 20mm.
<b>Storage and transport</b>	Can be stored in cold conditions but needs to be frost protected. Protect BSK has a normal shelf life of 12 months.	Can be stored in cold conditions but needs to be frost protected. Protect BSF has a normal shelf life of 12 months.	T > + 15°C and T ≤ + 30°C/RH ≤ 65%. Recommended storage time is 12 months.	Store in a dry place.
<b>Classification</b>	Classification according to Regulation (EC) No 1272/2008: Protect BSK is not classified according to CLP regulation.	Classification according to Regulation (EC) N° 1272/2008: Protect BSF is not classified according to CLP regulation.	Not applicable	Not applicable



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