

S&P ARMO-mesh®

Reinforcement mesh made from carbon fibre



A Simpson Strong-Tie® Company

The information in this technical data sheet is valid for the S&P range of products, systems and solutions.
Please note that the information in your country may vary. Visit sp-reinforcement.eu to find your local branch.

DESCRIPTION

S&P ARMO-mesh® is a unidirectional or bidirectional carbon fibre mesh with high strength for structural reinforcement of thin-walled structures. The S&P ARMO-mesh® is applied using the reactive mortar S&P ARMO-crete® in a dry lay-up or wet lay-up application process.

For seismic strengthening of historical masonry, the shotcrete mortar S&P ARMO-mur® (based on lime mortar) should be applied.

WHERE TO USE

- Universal application possibilities in buildings, underground structures, tunnels and gallery constructions
- Renovation and strengthening of existing building materials in combination with S&P ARMO-crete®
- Ensuring the safety of excavations and construction pits
- Replacement of corroded steel reinforcement
- Reinforcement of masonry
- Maximum preservation of structure gauge and flow profile

PERFORMANCE FEATURES

- Very high tensile strength
- No corrosion
- Low weight per unit area of mesh
- Simple and flexible application (also overhead)
- Coated with amorphous silica
- High heat resistance
- High adhesive properties with S&P ARMO-crete®
- Low application thickness

GENERAL FEATURES

PRODUCT DATA

Generic description

S&P ARMO-mesh®

Appearance

Carbon or Carbon/Glass fibre mesh

Coating

Amorphous silica as a reactive component

Size

S&P ARMO-mesh® L600, L500, L200:

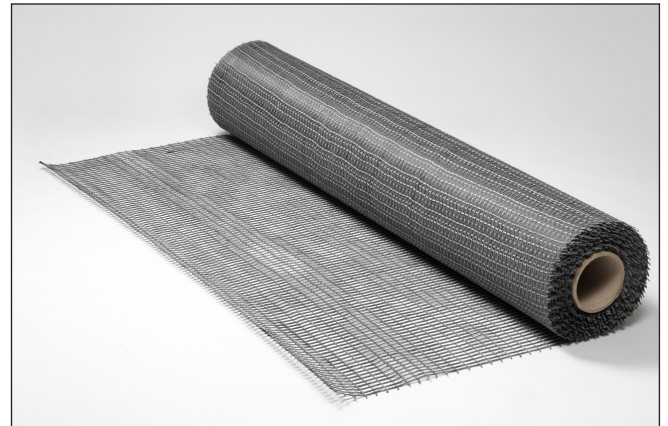
Width / length of roll: 1.95 m / 50 m

S&P ARMO-mesh® 200/200, 500/500:

Width / length of roll: 1.95 m / 50 m

Storage

In original packaging and in a cool, dry and covered area without direct sunlight.



PREPARATION

Application

Depending on the mortar application (wet lay-up or dry lay-up process), the S&P ARMO-mesh® reinforcement is either embedded, wet-in-wet, in the mortar, or fixed onto the first shotcrete mortar layer using the special Inox staples. In both varieties, the reinforcement must be covered in accordance with the specific requirements and regulations.

Details can be found in the installation instructions for the respective mortars.

Cutting of product

Do not cut the product with a knife. Ideally, use industrial scissors to cut the mesh.

MECHANICAL PROPERTIES

Property	Unit	ARMO-mesh® L600	ARMO-mesh® L500	ARMO-mesh® L200	ARMO-mesh® 200/200	ARMO-mesh® 500/500
Direction	-	Longitudinal	Longitudinal	Longitudinal	Longitudinal / Cross	Longitudinal / Cross
Number of strings per metre	n/m	58.5	58.5	50	50	58.5
Modulus of elasticity*	kN/mm ²	240	240	≥ 240	≥ 240 / 240	240 / 250
Reduction factor on elastic modulus due to application (S&P recommendation)	-	1.5	1.5	1.5	1.5	1.5
Elastic modulus for design*	kN/mm ²	160	160	160	160	160 / 167
Tensile strength*	N/mm ²	≥ 4300	≥ 4300	≥ 4400	≥ 4400 / ≥ 4300	≥ 4300 / 4300
Theoretical weight of C-fibre per unit area*	g/m ²	281	187	80	80	187
Density*	g/cm ³	1.78	1.78	1.78	1.78	1.78 / 1.77
Elongation at break*	%	≥ 1.7	1.8	1.8 - 2.1	1.8 - 2.1 / 1.8	1.8 / 1.7
Design thickness (fibre weight/density)	mm	0.157	0.105	0.044	0.044	0.105
Theoretical design cross-section, Width: 1000 mm	mm ²	157	105	44	44	105
Tensile force, ultimate Width: 1000 mm	kN	675	451	193	193 / 189	451
Tensile force for design For design value refer to national standard S&P recommend not to design with higher values than below:						
Flexural (~800 N/mm ²) Width: 1000 mm at ε = 0.5 %	kN	125	84	35	35	84 / 87
Axial (~640 N/mm ²) Width: 1000 mm at ε = 0.4 %	kN	100	67	28	28	67 / 70

*The values given are typical values according to the technical details of the fibre used.

TESTING

Please contact us if you require any information regarding tests that have been conducted.

Test reports may be available.

NOTES

S&P provides design guidelines as well as a special design software for the S&P ARMO-system:

- ARMO flexion – for the strengthening of steel-reinforced concrete and pre-stressed concrete construction elements
- ARMO axial – for the strengthening of centrally loaded reinforced concrete columns

For detailed advice, please contact our engineering department.

HEALTH & SAFETY

S&P ARMO-mesh® contains carbon/glass fibres. During its handling precautions must be taken including the use of protective clothing and gloves, thus avoiding contact with skin. Safety data sheets are available upon request. Further information is available on the material safety data sheet and the product packaging. Safety data sheets can be obtained by contacting our customer support services +41 41 825 00 70 or emailing info@sp-reinforcement.eu.

S&P's range of products are for industrial use. They must be installed by specialised personnel and competent professionals with adequate training. The installation instructions must be followed and can be found in S&P application manuals and several "Guideline" documents / existing technical notes.

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The information and data in this technical data sheet serve to ensure the normal intended use and normal application suitability; the information and data are based on our knowledge and experience. They do not absolve the user from their own responsibility to check the suitability and application method.

The rights to make changes to product specifications are reserved. Furthermore, our general sales and delivery terms apply. The current, most recent product data sheet is valid, and should be requested from us.

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