solidian GRID Q27-CCE-68

Symmetrical, bidirectional reinforcement mats (type Q) made of media-resistant carbon fiber reinforced plastic

Material

Fiber material	C (Carbon)
Impregnation material	E (Epoxy resin)
Color	black
	up to XD3
	up to XS3
Chemical resistance acc. to EN 1992	up to XF4
	up to XA3



Geometry and structure		Unit	Value	Tolerance	Standard
Discretians of the effect stress de	Longitudinal	F01	0	± 5°	
Directions of the fiber strands	Transversal	— [°] -	90	± 5°	-
E1	Longitudinal	[]	5,3	-	
Fiber strand width	Transversal	— [mm] -	3,9	-	-
File ou atuacia di la ai alat	Longitudinal	[]	1,4	-	
Fiber strand height	Transversal	— [mm] -	1,9	_	-
Fiber cross-sectional area of fiber strand	Longitudinal	— [mm²] -	1,81	-	
	Transversal		1,81	-	-
	Longitudinal	5 2/ 1	26,6	-	
Fiber cross-sectional area	Transversal	— [mm²/m] -	26,6	-	-
	Longitudinal	r 1	68	± 10%	
Grid width	Transversal	— [mm] -	68	± 10%	-
	Longitudinal	r 3	64,1	± 10%	
Light spacing of the fiber strands	Transversal	— [mm] -	62,9	± 10%	-
Grid height		[mm]	2,9	-	-
Weight per unit area		[g/m²]	183	± 7%	DIN EN 12127

Material properties		Unit	Value	Tolerance	Standard
Bulk density of the fiber composite mate	erial	[g/cm³]	1,28	± 0,06	ISO 1183-1
	Longitudinal	— [10 ⁻⁶ /K]	ca1,4		ISO 11359-2/
Coefficient of thermal expansion	Transversal	— [10 %K]	ca. 36	_	ISO 10406-1
Glass transition temperature T _g 0 (DMA)		[°C]	≥ 110	-	DIN 65583

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Mechanical properties		Unit	Value	Tolerance	Standard
Mean short-time tensile strength regarding	Longitudinal	- [N/mm²]	3.850		ISO 10406-1
fiber cross-sectional area	Transversal	[[N/]]]]]	4.050	-	130 10400-1
Characteristic short-term tensile strength	Longitudinal	- [N/mm²]	≥ 3.000	-	ICO 10 40C 1
regarding fiber cross-sectional area	Transversal		≥ 3.100	-	ISO 10406-1
Average Young's modulus regarding fiber	Longitudinal	- [N/mm²]	243.300	-	ICO 10 40C 1
cross-sectional area	Transversal		255.500	-	ISO 10406-1
Characteristic short-time tensile force	Longitudinal	[[.].]/]	≥ 79,8	-	ICO 10 40C 1
transmission of the reinforcement	Transversal	— [kN/m]	≥ 82,5	-	ISO 10406-1

Other key values	Unit	Value	Tolerance	
Recommended maximum grain size in concrete	[mm]	16	-	

Standard goods variety		Unit	Value	Tolerance
Grid	Length	. []	6,0	± 16 mm
	Width	[m]	2,30	± 12 mm
Roll	Length	[ma]	≥ 25,0	-
	Width	[m]	2,30	± 12 mm

Single grids up to 3.0 m wide on request. The maximum length of the grid on a roll depends on the product type and transport. Please enquire before ordering. Please specify the required length of the grid on a roll when ordering.

Transport and storage conditions

Non-metallic reinforcements from solidian GmbH must not be damaged during transport, storage, processing and installation and must not be exposed to temperatures higher than 80°C. They must be stored in a dry place, protected from the weather and without touching the ground. They must be stored dry, protected from the weather and without touching the ground. They must be protected from UV radiation and moisture until concreting and must be free from bond-reducing impurities (e.g. grease, soil, loose concrete residue).



Product page

https://solidian.com/products/solidian-grid-carbon-mats/

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Measurement

Specified values were determined on the product itself. Deviating properties may occur in the structural component or during processing. We recommend checking the values by suitable structural component tests with the concrete formulation used in each case.

Tests

As part of our in-house production control, two test units with 6 tensile tests each per reinforcement direction are carried out for each production order for quality assurance purposes, from which the characteristic short-term tensile strength is determined. All other measured values are determined as part of a comprehensive product qualification and are not subject to continuous control.

The described tensile tests per production order are included in the quotation costs. If you need an extended production control for your construction project, please contact us. We will be happy to provide you with a nonbinding quotation for additional production-related tests.

Country-specific regulations

The use of the product is governed by the respective national regulations at the place of use, in Germany for example the building codes of the federal states, and the technical provisions based on these regulations.

The design is generally carried out in accordance with the applicable standards for reinforced concrete components, although adjustments must be made for fiber composite plastic reinforcements if applicable standards, guidelines, etc. for fiber composite plastic reinforcements are not available. Accordingly, the respective national standards and regulations must be taken into account in the design.

Processing information

All work must be carried out by trained/instructed personnel only. Damaged fiber bundles (resin spalling, brittle areas, etc.) must not be installed, as the specified load-bearing capacity cannot be guaranteed. The specified values of the product, in particular with regard to tensile strength, only apply if the product is used as intended.

For further information, please refer to the current Technical Information for our solidian GRID reinforcement mats (www.solidian.com/downloads).

Ecology and health protection

REGULATION (EC) NO. 1907/2006 - REACH.

This product is an article as defined in Article 3 of Regulation (EC) No 1907/2006 (REACH). It does not contain substances that are released from the article during normal use. A safety data sheet according to Article 31 of the same regulation is not required to place this product on the market, to transport it or to use it. For safe use, follow the instructions from this data sheet. To our current knowledge, this product does not contain any SVHC (Substances of Very High Concern) according to Annex XIV of the REACH Regulation or substances published on the Candidate List by the European Chemicals Agency at concentrations above 0.1% (w/w).

Industrial safety and health

Protective measures must be observed during all work with cutting equipment, such as wearing cut-resistant gloves, safety goggles and a dust mask. The actual handling of fiber composites should be based on the Technical Rules for Hazardous Substances (TRGS) of the German Federal Institute for Occupational Safety and Health (baua). Furthermore, we refer to the DGUV information "Machining of CFRP materials - Guidance for protective measures" (FB-HM 074, issue 10/2014).

Legal information

The above information is based on our knowledge and experience under normal conditions, provided that the product has been transported, stored, used and processed properly and in accordance with the specifications in this Product Data Sheet and the Technical Information for our solidian GRID reinforcement mats. The work results that can be achieved with our products depend in particular on their use and processing. The suitability of the product for the specific application must be checked in advance on your own responsibility.

Since non-metallic reinforcements are not yet regulated by building authorities in most countries, planners, specialist planners, building authorities, structural engineers, experts, etc. must be consulted for load-bearing components and country-specific regulations must be observed (e.g. approvals in individual cases).

We reserve the right to make changes to the product specifications. Third-party industrial property rights must be observed. In all other respects, our respective terms and conditions of sale and delivery shall apply. The latest technical product data sheet at the time of purchase of our products shall apply.

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solidian GRID Q43-CCE-21

Symmetrical, bidirectional reinforcement mats (type Q) made of media-resistant carbon fiber reinforced plastic

Material

Fiber material	C (Carbon)
Impregnation material	E (Epoxy resin)
Color	black
	up to XD3
Characiant anniator and to FNI 1002	up to XS3
Chemical resistance acc. to EN 1992	up to XF4
	up to XA3



Geometry and structure		Unit	Value	Tolerance	Standard
Directions of the fiber strands	Longitudinal	F01	0	± 5°	
Directions of the liber straints	Transversal	— [°] ·	90	± 5°	-
File on attack of windtle	Longitudinal	[]	2,2	-	
Fiber strand width	Transversal	— [mm] -	3,0	-	-
The control of the state	Longitudinal	[]	1,4	-	
Fiber strand height	Transversal	— [mm] -	1,1	-	-
Fiber cross-sectional area of fiber strand	Longitudinal	r 21	0,905	-	
	Transversal	– [mm²] -	0,905	-	-
El e l	Longitudinal	r 2/ 1	42,5	-	
Fiber cross-sectional area	Transversal	— [mm²/m] -	42,3	-	-
	Longitudinal	r 1	21	± 3,0	
Grid width	Transversal	— [mm] ·	21	± 3,0	-
	Longitudinal	r 1	18,3	± 3,0	
Light spacing of the fiber strands	Transversal	— [mm] ·	19,1	± 3,0	-
Grid height		[mm]	2,2	-	-
Weight per unit area		[g/m²]	280	± 7%	DIN EN 12127

Material properties		Unit	Value	Tolerance	Standard
Bulk density of the fiber composite mate	rial	[g/cm³]	1,26	± 0,06	ISO 1183-1
	Longitudinal	— [10 ⁻⁶ /K]	ca1,4	_	ISO 11359-2/
Coefficient of thermal expansion	Transversal	— [10 %K]	ca. 36	-	ISO 10406-1
Glass transition temperature T _g 0 (DMA)		[°C]	≥ 110	-	DIN 65583

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Mechanical properties		Unit	Value	Tolerance	Standard
Mean short-time tensile strength regarding	Longitudinal	- [N/mm²]	4.050		ISO 10406-1
fiber cross-sectional area	Transversal	[IN/IIIIII]	4.200	-	130 10400-1
Characteristic short-term tensile strength	Longitudinal	— [N/mm²]	≥ 3.200	-	100 10400 1
regarding fiber cross-sectional area	Transversal		≥ 3.300	-	ISO 10406-1
Average Young's modulus regarding fiber	Longitudinal	- [N/mm²]	243.500	-	100 10400 1
cross-sectional area	Transversal		247.000 -	-	ISO 10406-1
Characteristic short-time tensile force	Longitudinal	[].N.I./	≥ 136,0	-	100 10400 1
transmission of the reinforcement	Transversal	— [kN/m]	≥ 139,6	-	ISO 10406-1

Other key values	Unit	Value	Tolerance	
Recommended maximum grain size in concrete 1)	[mm]	5	-	

Standard goods variety		Unit	Value	Tolerance
Grid	Length	F 1	6,0	± 16 mm
	Width	[m]	2,30	± 12 mm
Roll	Length	[m]	≥ 25,0	-
	Width		2,30	± 12 mm

Single grids up to 3.0 m wide on request. The maximum length of the grid on a roll depends on the product type and transport. Please enquire before ordering. Please specify the required length of the grid on a roll when ordering.

Transport and storage conditions

Non-metallic reinforcements from solidian GmbH must not be damaged during transport, storage, processing and installation and must not be exposed to temperatures higher than 80°C. They must be stored in a dry place, protected from the weather and without touching the ground. They must be stored dry, protected from the weather and without touching the ground. They must be protected from UV radiation and moisture until concreting and must be free from bond-reducing impurities (e.g. grease, soil, loose concrete residue).



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 $^{^{1)}}$ d_g = 8 mm possible depending on the manufacturing process.



Measurement

Specified values were determined on the product itself. Deviating properties may occur in the structural component or during processing. We recommend checking the values by suitable structural component tests with the concrete formulation used in each case.

Tests

As part of our in-house production control, two test units with 6 tensile tests each per reinforcement direction are carried out for each production order for quality assurance purposes, from which the characteristic short-term tensile strength is determined. All other measured values are determined as part of a comprehensive product qualification and are not subject to continuous control.

The described tensile tests per production order are included in the quotation costs. If you need an extended production control for your construction project, please contact us. We will be happy to provide you with a nonbinding quotation for additional production-related tests.

Country-specific regulations

The use of the product is governed by the respective national regulations at the place of use, in Germany for example the building codes of the federal states, and the technical provisions based on these regulations.

The design is generally carried out in accordance with the applicable standards for reinforced concrete components, although adjustments must be made for fiber composite plastic reinforcements if applicable standards, guidelines, etc. for fiber composite plastic reinforcements are not available. Accordingly, the respective national standards and regulations must be taken into account in the design.

Processing information

All work must be carried out by trained/instructed personnel only. Damaged fiber bundles (resin spalling, brittle areas, etc.) must not be installed, as the specified load-bearing capacity cannot be guaranteed. The specified values of the product, in particular with regard to tensile strength, only apply if the product is used as intended.

For further information, please refer to the current Technical Information for our solidian GRID reinforcement mats (www.solidian.com/downloads).

Ecology and health protection

REGULATION (EC) NO. 1907/2006 - REACH.

This product is an article as defined in Article 3 of Regulation (EC) No 1907/2006 (REACH). It does not contain substances that are released from the article during normal use. A safety data sheet according to Article 31 of the same regulation is not required to place this product on the market, to transport it or to use it. For safe use, follow the instructions from this data sheet. To our current knowledge, this product does not contain any SVHC (Substances of Very High Concern) according to Annex XIV of the REACH Regulation or substances published on the Candidate List by the European Chemicals Agency at concentrations above 0.1% (w/w).

Industrial safety and health

Protective measures must be observed during all work with cutting equipment, such as wearing cut-resistant gloves, safety goggles and a dust mask. The actual handling of fiber composites should be based on the Technical Rules for Hazardous Substances (TRGS) of the German Federal Institute for Occupational Safety and Health (baua). Furthermore, we refer to the DGUV information "Machining of CFRP materials - Guidance for protective measures" (FB-HM 074, issue 10/2014).

Legal information

The above information is based on our knowledge and experience under normal conditions, provided that the product has been transported, stored, used and processed properly and in accordance with the specifications in this Product Data Sheet and the Technical Information for our solidian GRID reinforcement mats. The work results that can be achieved with our products depend in particular on their use and processing. The suitability of the product for the specific application must be checked in advance on your own responsibility.

Since non-metallic reinforcements are not yet regulated by building authorities in most countries, planners, specialist planners, building authorities, structural engineers, experts, etc. must be consulted for load-bearing components and country-specific regulations must be observed (e.g. approvals in individual cases).

We reserve the right to make changes to the product specifications. Third-party industrial property rights must be observed. In all other respects, our respective terms and conditions of sale and delivery shall apply. The latest technical product data sheet at the time of purchase of our products shall apply.

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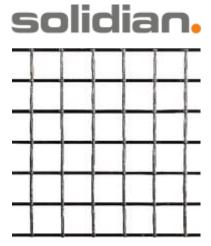


solidian GRID Q47-CCE-38

Symmetrical, bidirectional reinforcement mats (type Q) made of media-resistant carbon fiber reinforced plastic

Material

Fiber material	C (Carbon)		
Impregnation material	E (Epoxy resin)		
Color	black		
	up to XD3		
Character Lands to EN14002	up to XS3		
Chemical resistance acc. to EN 1992	up to XF4		
	up to XA3		



Geometry and structure		Unit	Value	Tolerance	Standard
Directions of the fiber strands	Longitudinal	F01	0	± 5°	
Directions of the liber strands	Transversal	— [°] -	90	± 5°	-
=	Longitudinal	[]	3,5	-	
Fiber strand width	Transversal	— [mm] -	4,1	-	-
The contract had be	Longitudinal	ſ1	1,9	-	
Fiber strand height	Transversal	— [mm] -	1,8	-	-
Fiber cross-sectional area of fiber strand	Longitudinal	— [mm²] –	1,81	-	
	Transversal		1,81	-	-
	Longitudinal	— [mm²/m]	47,3	-	
Fiber cross-sectional area	Transversal		47,1	-	-
C 2 d - 2 d d d	Longitudinal	ſ1	38	± 10%	
Grid width	Transversal	— [mm] -	38	± 10%	-
Light spacing of the fiber strands	Longitudinal	ſ1	34,2	± 10%	
	Transversal	— [mm] -	34,9	± 10%	-
Grid height		[mm]	3,4	-	-
Weight per unit area		[g/m²]	309	± 7%	DIN EN 12127

Material properties		Unit	Value	Tolerance	Standard
Bulk density of the fiber composite mate	rial	[g/cm³]	1,26	± 0,06	ISO 1183-1
Coefficient of thermal expansion	Longitudinal	— [10 ⁻⁶ /K]	ca1,4	_	ISO 11359-2/
	Transversal	— [10 %K]	ca. 36	-	ISO 10406-1
Glass transition temperature T _g 0 (DMA)		[°C]	≥ 110	-	DIN 65583

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Mechanical properties		Unit	Value	Tolerance	Standard
Mean short-time tensile strength regarding	Longitudinal	- [N/mm²]	3.850		ISO 10406-1
fiber cross-sectional area	Transversal	[IN/IIIII]	4.050	-	130 10400-1
Characteristic short-term tensile strength	Longitudinal	[N.L./20222]	≥ 3.100	-	100 10406 1
regarding fiber cross-sectional area	Transversal	— [N/mm²]	≥ 3.100	-	ISO 10406-1
Average Young's modulus regarding fiber	Longitudinal	— [N/mm²]	al 250.500	-	100 10406 1
cross-sectional area	Transversal		251.000	-	ISO 10406-1
Characteristic short-time tensile force	Longitudinal	al [kN/m]	≥ 146,6	-	100 10406 1
transmission of the reinforcement	Transversal	– [kN/m]	≥ 146,0	-	ISO 10406-1

Other key values	Unit	Value	Tolerance	
Recommended maximum grain size in concrete 1)	[mm]	8	-	

Standard goods variety		Unit	Value	Tolerance
Grid	Length	[ma]	6,0	± 16 mm
	Width	[m]	2,30	± 12 mm
Roll	Length	[1	≥ 25,0	-
	Width	[m]	2,30	± 12 mm

Single grids up to 3.0 m wide on request. The maximum length of the grid on a roll depends on the product type and transport. Please enquire before ordering. Please specify the required length of the grid on a roll when ordering.

Transport and storage conditions

Non-metallic reinforcements from solidian GmbH must not be damaged during transport, storage, processing and installation and must not be exposed to temperatures higher than 80°C. They must be stored in a dry place, protected from the weather and without touching the ground. They must be stored dry, protected from the weather and without touching the ground. They must be protected from UV radiation and moisture until concreting and must be free from bond-reducing impurities (e.g. grease, soil, loose concrete residue).



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 $^{^{1)}}$ d_g = 16 mm possible depending on the manufacturing process.



Measurement

Specified values were determined on the product itself. Deviating properties may occur in the structural component or during processing. We recommend checking the values by suitable structural component tests with the concrete formulation used in each case.

Tests

As part of our in-house production control, two test units with 6 tensile tests each per reinforcement direction are carried out for each production order for quality assurance purposes, from which the characteristic short-term tensile strength is determined. All other measured values are determined as part of a comprehensive product qualification and are not subject to continuous control.

The described tensile tests per production order are included in the quotation costs. If you need an extended production control for your construction project, please contact us. We will be happy to provide you with a nonbinding quotation for additional production-related tests.

Country-specific regulations

The use of the product is governed by the respective national regulations at the place of use, in Germany for example the building codes of the federal states, and the technical provisions based on these regulations.

The design is generally carried out in accordance with the applicable standards for reinforced concrete components, although adjustments must be made for fiber composite plastic reinforcements if applicable standards, guidelines, etc. for fiber composite plastic reinforcements are not available. Accordingly, the respective national standards and regulations must be taken into account in the design.

Processing information

All work must be carried out by trained/instructed personnel only. Damaged fiber bundles (resin spalling, brittle areas, etc.) must not be installed, as the specified load-bearing capacity cannot be guaranteed. The specified values of the product, in particular with regard to tensile strength, only apply if the product is used as intended.

For further information, please refer to the current Technical Information for our solidian GRID reinforcement mats (www.solidian.com/downloads).

Ecology and health protection

REGULATION (EC) NO. 1907/2006 - REACH.

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Industrial safety and health

Protective measures must be observed during all work with cutting equipment, such as wearing cut-resistant gloves, safety goggles and a dust mask. The actual handling of fiber composites should be based on the Technical Rules for Hazardous Substances (TRGS) of the German Federal Institute for Occupational Safety and Health (baua). Furthermore, we refer to the DGUV information "Machining of CFRP materials - Guidance for protective measures" (FB-HM 074, issue 10/2014).

Legal information

The above information is based on our knowledge and experience under normal conditions, provided that the product has been transported, stored, used and processed properly and in accordance with the specifications in this Product Data Sheet and the Technical Information for our solidian GRID reinforcement mats. The work results that can be achieved with our products depend in particular on their use and processing. The suitability of the product for the specific application must be checked in advance on your own responsibility.

Since non-metallic reinforcements are not yet regulated by building authorities in most countries, planners, specialist planners, building authorities, structural engineers, experts, etc. must be consulted for load-bearing components and country-specific regulations must be observed (e.g. approvals in individual cases).

We reserve the right to make changes to the product specifications. Third-party industrial property rights must be observed. In all other respects, our respective terms and conditions of sale and delivery shall apply. The latest technical product data sheet at the time of purchase of our products shall apply.

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solidian GRID Q71-CCE-51

Symmetrical, bidirectional reinforcement mats (type Q) made of media-resistant carbon fiber reinforced plastic

Material

Fiber material	C (Carbon)
Impregnation material	E (Epoxy resin)
Color	black
	up to XD3
Chemical resistance acc. to EN 1992	up to XS3
	up to XF4
	up to XA3



	Unit	Value	Tolerance	Standard
Longitudinal		0	± 5°	
Transversal		90	± 5°	-
Longitudinal	[]	5,0	-	
Transversal	— [mm] -	5,8	-	-
Longitudinal	[]	2,7	-	
Transversal	— [mm] -	2,6	-	-
Longitudinal	— [mm²] –	3,62	-	
Transversal		3,62	-	-
Longitudinal	5 2/ 7	70,8	-	
Transversal	— [mm ⁻ /m] -	70,8	-	-
Longitudinal	[]	51	± 10%	
Transversal	— [mm] -	51	± 10%	-
Longitudinal	r 1	45,4	± 10%	
Transversal	— [mm] -	46,2	± 10%	-
	[mm]	4,6	-	-
	[g/m²]	453	± 7%	DIN EN 12127
	Transversal Longitudinal	Longitudinal Transversal [mm]	Longitudinal [°] 0 Transversal 90 Longitudinal [mm] 5,0 Transversal 5,8 Longitudinal [mm] 2,7 Transversal [mm] 3,62 Longitudinal [mm²] 70,8 Transversal [mm] 51 Longitudinal [mm] 51 Transversal [mm] 45,4 Transversal [mm] 4,6	Longitudinal [°] 0 ± 5° Transversal 90 ± 5° Longitudinal [mm] 5,0 - 5,8 - Longitudinal [mm] 2,7 - Transversal [mm²] 3,62 - Longitudinal [mm²/m] 70,8 - Longitudinal [mm] 51 ± 10% Transversal [mm] 45,4 ± 10% Longitudinal [mm] 46,2 ± 10% Imansversal [mm] 4,6 -

Material properties		Unit	Value	Tolerance	Standard
Bulk density of the fiber composite mate	rial	[g/cm³]	1,24	± 0,06	ISO 1183-1
Coefficient of thermal expansion	Longitudinal	— [10 ⁻⁶ /K]	ca1,4		ISO 11359-2/
	Transversal	— [10 %K]	ca. 36	_	ISO 10406-1
Glass transition temperature T _g 0 (DMA)		[°C]	≥ 110	-	DIN 65583

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Mechanical properties		Unit	Value	Tolerance	Standard
Mean short-time tensile strength regarding	Longitudinal	- [N/mm²]	3.600		ISO 10406-1
fiber cross-sectional area	Transversal	[IN/IIIII-]	3.900	-	150 10406-1
Characteristic short-term tensile strength	Longitudinal	[N.L./202027]	≥ 2.750	-	ICO 10 40C 1
regarding fiber cross-sectional area	Transversal	— [N/mm²]	≥ 3.100	-	ISO 10406-1
Average Young's modulus regarding fiber	Longitudinal	FN L / 21	247.500	-	100 10 100 1
cross-sectional area	Transversal	- [N/mm ²]	253.000	-	ISO 10406-1
Characteristic short-time tensile force	Longitudinal	gitudinal		-	100 10 100 1
transmission of the reinforcement	Transversal	– [kN/m]	≥ 219,5	-	ISO 10406-1

Other key values	Unit	Value	Tolerance	
Recommended maximum grain size in concrete	[mm]	16	-	

Standard goods variety		Unit	Value	Tolerance
Grid	Length	. []	6,0	± 16 mm
	Width	[m]	2,30	± 12 mm
Roll	Length	[ma]	≥ 25,0	-
	Width	[m]	2,30	± 12 mm

Single grids up to 3.0 m wide on request. The maximum length of the grid on a roll depends on the product type and transport. Please enquire before ordering. Please specify the required length of the grid on a roll when ordering.

Transport and storage conditions

Non-metallic reinforcements from solidian GmbH must not be damaged during transport, storage, processing and installation and must not be exposed to temperatures higher than 80°C. They must be stored in a dry place, protected from the weather and without touching the ground. They must be stored dry, protected from the weather and without touching the ground. They must be protected from UV radiation and moisture until concreting and must be free from bond-reducing impurities (e.g. grease, soil, loose concrete residue).



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Measurement

Specified values were determined on the product itself. Deviating properties may occur in the structural component or during processing. We recommend checking the values by suitable structural component tests with the concrete formulation used in each case.

Tests

As part of our in-house production control, two test units with 6 tensile tests each per reinforcement direction are carried out for each production order for quality assurance purposes, from which the characteristic short-term tensile strength is determined. All other measured values are determined as part of a comprehensive product qualification and are not subject to continuous control.

The described tensile tests per production order are included in the quotation costs. If you need an extended production control for your construction project, please contact us. We will be happy to provide you with a nonbinding quotation for additional production-related tests.

Country-specific regulations

The use of the product is governed by the respective national regulations at the place of use, in Germany for example the building codes of the federal states, and the technical provisions based on these regulations.

The design is generally carried out in accordance with the applicable standards for reinforced concrete components, although adjustments must be made for fiber composite plastic reinforcements if applicable standards, guidelines, etc. for fiber composite plastic reinforcements are not available. Accordingly, the respective national standards and regulations must be taken into account in the design.

Processing information

All work must be carried out by trained/instructed personnel only. Damaged fiber bundles (resin spalling, brittle areas, etc.) must not be installed, as the specified load-bearing capacity cannot be guaranteed. The specified values of the product, in particular with regard to tensile strength, only apply if the product is used as intended.

For further information, please refer to the current Technical Information for our solidian GRID reinforcement mats (www.solidian.com/downloads).

Ecology and health protection

REGULATION (EC) NO. 1907/2006 - REACH.

This product is an article as defined in Article 3 of Regulation (EC) No 1907/2006 (REACH). It does not contain substances that are released from the article during normal use. A safety data sheet according to Article 31 of the same regulation is not required to place this product on the market, to transport it or to use it. For safe use, follow the instructions from this data sheet. To our current knowledge, this product does not contain any SVHC (Substances of Very High Concern) according to Annex XIV of the REACH Regulation or substances published on the Candidate List by the European Chemicals Agency at concentrations above 0.1% (w/w).

Industrial safety and health

Protective measures must be observed during all work with cutting equipment, such as wearing cut-resistant gloves, safety goggles and a dust mask. The actual handling of fiber composites should be based on the Technical Rules for Hazardous Substances (TRGS) of the German Federal Institute for Occupational Safety and Health (baua). Furthermore, we refer to the DGUV information "Machining of CFRP materials - Guidance for protective measures" (FB-HM 074, issue 10/2014).

Legal information

The above information is based on our knowledge and experience under normal conditions, provided that the product has been transported, stored, used and processed properly and in accordance with the specifications in this Product Data Sheet and the Technical Information for our solidian GRID reinforcement mats. The work results that can be achieved with our products depend in particular on their use and processing. The suitability of the product for the specific application must be checked in advance on your own responsibility.

Since non-metallic reinforcements are not yet regulated by building authorities in most countries, planners, specialist planners, building authorities, structural engineers, experts, etc. must be consulted for load-bearing components and country-specific regulations must be observed (e.g. approvals in individual cases).

We reserve the right to make changes to the product specifications. Third-party industrial property rights must be observed. In all other respects, our respective terms and conditions of sale and delivery shall apply. The latest technical product data sheet at the time of purchase of our products shall apply.

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solidian GRID Q85-CCE-21

Symmetrical, bidirectional reinforcement mats (type Q) made of media-resistant carbon fiber reinforced plastic

Material

Fiber material	C (Carbon)
Impregnation material	E (Epoxy resin)
Color	black
	up to XD3
	up to XS3
Chemical resistance acc. to EN 1992	up to XF4
	up to XA3



Geometry and structure		Unit	Value	Tolerance	Standard
Directions of the fiber strands	Longitudinal		0	± 5°	
Directions of the liber straints	Transversal	— [°] -	90	± 5°	-
Fiber strand width	Longitudinal	_ [3,4	-	
	Transversal	— [mm] -	4,2	_	-
File as attack at least solution	Longitudinal	[]	1,8	_	
Fiber strand height	Transversal	— [mm] -	1,5	_	-
Fiber cross-sectional area of fiber strand	Longitudinal	— [mm²] -	1,81	-	
	Transversal	— [mm-j -	1,81	-	-
Ethan and a self-and and	Longitudinal	r 2/ 1	85,4	_	
Fiber cross-sectional area	Transversal	— [mm²/m] -	84,6	-	-
Cold Calls	Longitudinal	ſ1	21	± 3,0	
Grid width	Transversal	— [mm] -	21	± 3,0	-
Light spacing of the fiber strands	Longitudinal	ſ1	17,0	± 3,0	
	Transversal	— [mm] -	18,0	± 3,0	-
Grid height		[mm]	2,4	-	-
Weight per unit area		[g/m²]	512	± 7%	DIN EN 12127

Material properties		Unit	Value	Tolerance	Standard
Bulk density of the fiber composite mate	erial	[g/cm³]	1,26	± 0,06	ISO 1183-1
	Longitudinal	— [10 ⁻⁶ /K]	ca1,4		ISO 11359-2/
Coefficient of thermal expansion	nt of thermal expansion Transversal	— [10 %K]	ca. 36	_	ISO 10406-1
Glass transition temperature T _g 0 (DMA)		[°C]	≥ 110	-	DIN 65583

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Mechanical properties		Unit	Value	Tolerance	Standard
Mean short-time tensile strength regarding	Longitudinal	— [N/mm²]	3.950	-	ISO 10406-1
fiber cross-sectional area	Transversal	[[N/]]]]]	4.250	-	150 10400-1
Characteristic short-term tensile strength	Longitudinal	[N/mm²]	≥ 3.050	-	150 10406 1
regarding fiber cross-sectional area	Transversal		≥ 3.250	-	ISO 10406-1
Average Young's modulus regarding fiber	Longitudinal	[N] / ma ma 21	251.500	-	ICO 10 40C 1
cross-sectional area	Transversal	— [N/mm²]	254.000	-	ISO 10406-1
Characteristic short-time tensile force	Longitudinal	[l ₄ \] / ₂₀₀]	≥ 260,5	-	150 10406 1
transmission of the reinforcement	Transversal	— [kN/m]	≥ 275,0	-	ISO 10406-1

Other key values	Unit	Value	Tolerance	
Recommended maximum grain size in concrete 1)	[mm]	5	-	

Standard goods variety		Unit	Value	Tolerance
Grid	Length	F 1	6,0	± 16 mm
	Width	[m]	2,30	± 12 mm
Roll	Length	[m]	≥ 25,0	-
	Width		2,30	± 12 mm

Single grids up to 3.0 m wide on request. The maximum length of the grid on a roll depends on the product type and transport. Please enquire before ordering. Please specify the required length of the grid on a roll when ordering.

Transport and storage conditions

Non-metallic reinforcements from solidian GmbH must not be damaged during transport, storage, processing and installation and must not be exposed to temperatures higher than 80°C. They must be stored in a dry place, protected from the weather and without touching the ground. They must be stored dry, protected from the weather and without touching the ground. They must be protected from UV radiation and moisture until concreting and must be free from bond-reducing impurities (e.g. grease, soil, loose concrete residue).



Product page

https://solidian.com/products/solidian-grid-carbon-mats/

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 $^{^{1)}}$ d_g = 8 mm possible depending on the manufacturing process.



Measurement

Specified values were determined on the product itself. Deviating properties may occur in the structural component or during processing. We recommend checking the values by suitable structural component tests with the concrete formulation used in each case.

Tests

As part of our in-house production control, two test units with 6 tensile tests each per reinforcement direction are carried out for each production order for quality assurance purposes, from which the characteristic short-term tensile strength is determined. All other measured values are determined as part of a comprehensive product qualification and are not subject to continuous control.

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Country-specific regulations

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Processing information

All work must be carried out by trained/instructed personnel only. Damaged fiber bundles (resin spalling, brittle areas, etc.) must not be installed, as the specified load-bearing capacity cannot be guaranteed. The specified values of the product, in particular with regard to tensile strength, only apply if the product is used as intended.

For further information, please refer to the current Technical Information for our solidian GRID reinforcement mats (www.solidian.com/downloads).

Ecology and health protection

REGULATION (EC) NO. 1907/2006 - REACH.

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Industrial safety and health

Protective measures must be observed during all work with cutting equipment, such as wearing cut-resistant gloves, safety goggles and a dust mask. The actual handling of fiber composites should be based on the Technical Rules for Hazardous Substances (TRGS) of the German Federal Institute for Occupational Safety and Health (baua). Furthermore, we refer to the DGUV information "Machining of CFRP materials - Guidance for protective measures" (FB-HM 074, issue 10/2014).

Legal information

The above information is based on our knowledge and experience under normal conditions, provided that the product has been transported, stored, used and processed properly and in accordance with the specifications in this Product Data Sheet and the Technical Information for our solidian GRID reinforcement mats. The work results that can be achieved with our products depend in particular on their use and processing. The suitability of the product for the specific application must be checked in advance on your own responsibility.

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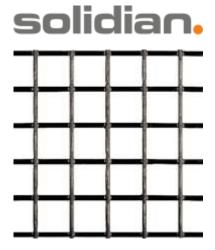


solidian GRID Q95-CCE-38

Symmetrical, bidirectional reinforcement mats (type Q) made of media-resistant carbon fiber reinforced plastic

Material

Fiber material	C (Carbon)
Impregnation material	E (Epoxy resin)
Color	black
	up to XD3
	up to XS3
Chemical resistance acc. to EN 1992	up to XF4
	up to XA3



Geometry and structure		Unit	Value	Tolerance	Standard
Directions of the fiber strands	Longitudinal		0	± 5°	
Directions of the liber straints	Transversal	— [°] -	90	± 5°	-
Fiber strand width	Longitudinal	[]	4,8	_	
	Transversal	— [mm] -	5,5	_	-
File ou atuacia di la ai alat	Longitudinal	[]	2,7	_	
Fiber strand height	Transversal	— [mm] -	2,5	-	-
Fiber cross-sectional area of fiber strand	Longitudinal	— [mm²] -	3,62	-	
	Transversal		3,62	-	-
E1	Longitudinal	. 2, 1	95,3	-	
Fiber cross-sectional area	Transversal	— [mm²/m] -	95,3	-	-
	Longitudinal	r 1	38	± 10%	
Grid width	Transversal	— [mm] -	38	± 10%	-
	Longitudinal	r 1	32,8	± 10%	
Light spacing of the fiber strands	Transversal	— [mm] -	33,5	± 10%	_
Grid height		[mm]	4,0	-	-
Weight per unit area		[g/m²]	559	± 7%	DIN EN 12127

Material properties		Unit	Value	Tolerance	Standard
Bulk density of the fiber composite mate	erial	[g/cm³]	1,28	± 0,06	ISO 1183-1
	Longitudinal	— [10 ⁻⁶ /K]	ca1,4		ISO 11359-2/
Coefficient of thermal expansion	Coefficient of thermal expansion Transversal	— [10 %K]	ca. 36	_	ISO 10406-1
Glass transition temperature T _g 0 (DMA)		[°C]	≥ 110	-	DIN 65583

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Mechanical properties		Unit	Value	Tolerance	Standard
Mean short-time tensile strength regarding	Longitudinal	- [N/mm²]	3.550		ISO 10406-1
fiber cross-sectional area	Transversal	[IN/IIIIII]	3.950	-	150 10400-1
Characteristic short-term tensile strength	Longitudinal	[N/mm²]	≥ 2.800	-	150 10406 1
regarding fiber cross-sectional area	Transversal		≥ 3.000	-	ISO 10406-1
Average Young's modulus regarding fiber	Longitudinal	[N.L./202022]	246.000	-	ICO 10 40C 1
cross-sectional area	Transversal	— [N/mm²]	249.500	-	ISO 10406-1
Characteristic short-time tensile force	Longitudinal	[],[],[],[]	≥ 266,8	-	150 10406 1
transmission of the reinforcement	Transversal	— [kN/m]	≥ 285,9	-	ISO 10406-1

Other key values	Unit	Value	Tolerance	
Recommended maximum grain size in concrete 1)	[mm]	8	-	

Standard goods variety		Unit	Value	Tolerance
Grid	Length	[00]	6,0	± 16 mm
	Width	[m]	2,30	± 12 mm
Roll	Length	[ma]	≥ 25,0	-
	Width	[m]	2,30	± 12 mm

Single grids up to 3.0 m wide on request. The maximum length of the grid on a roll depends on the product type and transport. Please enquire before ordering. Please specify the required length of the grid on a roll when ordering.

Transport and storage conditions

Non-metallic reinforcements from solidian GmbH must not be damaged during transport, storage, processing and installation and must not be exposed to temperatures higher than 80°C. They must be stored in a dry place, protected from the weather and without touching the ground. They must be stored dry, protected from the weather and without touching the ground. They must be protected from UV radiation and moisture until concreting and must be free from bond-reducing impurities (e.g. grease, soil, loose concrete residue).



Product page

https://solidian.com/products/solidian-grid-carbon-mats/

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 $^{^{1)}}$ d_g = 16 mm possible depending on the manufacturing process.



Measurement

Specified values were determined on the product itself. Deviating properties may occur in the structural component or during processing. We recommend checking the values by suitable structural component tests with the concrete formulation used in each case.

Tests

As part of our in-house production control, two test units with 6 tensile tests each per reinforcement direction are carried out for each production order for quality assurance purposes, from which the characteristic short-term tensile strength is determined. All other measured values are determined as part of a comprehensive product qualification and are not subject to continuous control.

The described tensile tests per production order are included in the quotation costs. If you need an extended production control for your construction project, please contact us. We will be happy to provide you with a nonbinding quotation for additional production-related tests.

Country-specific regulations

The use of the product is governed by the respective national regulations at the place of use, in Germany for example the building codes of the federal states, and the technical provisions based on these regulations.

The design is generally carried out in accordance with the applicable standards for reinforced concrete components, although adjustments must be made for fiber composite plastic reinforcements if applicable standards, guidelines, etc. for fiber composite plastic reinforcements are not available. Accordingly, the respective national standards and regulations must be taken into account in the design.

Processing information

All work must be carried out by trained/instructed personnel only. Damaged fiber bundles (resin spalling, brittle areas, etc.) must not be installed, as the specified load-bearing capacity cannot be guaranteed. The specified values of the product, in particular with regard to tensile strength, only apply if the product is used as intended.

For further information, please refer to the current Technical Information for our solidian GRID reinforcement mats (www.solidian.com/downloads).

Ecology and health protection

REGULATION (EC) NO. 1907/2006 - REACH.

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Industrial safety and health

Protective measures must be observed during all work with cutting equipment, such as wearing cut-resistant gloves, safety goggles and a dust mask. The actual handling of fiber composites should be based on the Technical Rules for Hazardous Substances (TRGS) of the German Federal Institute for Occupational Safety and Health (baua). Furthermore, we refer to the DGUV information "Machining of CFRP materials - Guidance for protective measures" (FB-HM 074, issue 10/2014).

Legal information

The above information is based on our knowledge and experience under normal conditions, provided that the product has been transported, stored, used and processed properly and in accordance with the specifications in this Product Data Sheet and the Technical Information for our solidian GRID reinforcement mats. The work results that can be achieved with our products depend in particular on their use and processing. The suitability of the product for the specific application must be checked in advance on your own responsibility.

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solidian GRID Q122-CCE-59

Symmetrical, bidirectional reinforcement mats (type Q) made of media-resistant carbon fiber reinforced plastic

Material

Fiber material	C (Carbon)			
Impregnation material	E (Epoxy resin)			
Color	black			
	up to XD3			
Charried acids as a FN 1002	up to XS3			
Chemical resistance acc. to EN 1992	up to XF4			
	up to XA3			



Geometry and structure		Unit	Value	Tolerance	Standard
Directions of the fiber strands	Longitudinal		0	± 5°	
	Transversal	— [°] -	90	± 5°	_
Fiber strand width	Longitudinal	[nono] -	9,3	_	
Fiber strand width	Transversal	— [mm] -	8,6	-	-
Fiber strand height	Longitudinal	[nono] -	3,1	_	
Fiber strand height	Transversal	— [mm] -	3,2	-	-
Fiber cross-sectional area of fiber strand	Longitudinal	F21	7,24	-	
	Transversal	- [mm²] -	7,24	-	-
Ethan and a self-and and	Longitudinal	r2/1	122,7	-	
Fiber cross-sectional area	Transversal	— [mm²/m] -	122,7	-	-
Cold table	Longitudinal	[]	59	± 10%	
Grid width	Transversal	— [mm] -	59	± 10%	-
Light spacing of the fiber strands	Longitudinal	[]	51,0	± 10%	
	Transversal	— [mm] -	50,3	± 10%	-
Grid height		[mm]	3,8	-	-
Weight per unit area		[g/m²]	709	± 7%	DIN EN 12127

Material properties		Unit	Value	Tolerance	Standard
Bulk density of the fiber composite material		[g/cm³]	1,28	± 0,06	ISO 1183-1
Coefficient of thermal expansion	Longitudinal	— [10 ⁻⁶ /K]	ca1,4	-	ISO 11359-2/
	Transversal		ca. 36	-	ISO 10406-1
Glass transition temperature T _g 0 (DMA)		[°C]	≥ 110	-	DIN 65583

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Mechanical properties		Unit	Value	Tolerance	Standard
Mean short-time tensile strength regarding	Longitudinal	— [N/mm²]	3.350	_	ISO 10406-1
fiber cross-sectional area	Transversal	[[N/[]]]	3.400	-	130 10400-1
Characteristic short-term tensile strength	Longitudinal	[N] /	≥ 2.700	-	100 10400 1
regarding fiber cross-sectional area	Transversal	[N/mm²]	≥ 2.700	-	ISO 10406-1
Average Young's modulus regarding fiber	Longitudinal	[N] /	245.000	-	100 10400 1
cross-sectional area	Transversal	— [N/mm²]	247.500	-	ISO 10406-1
Characteristic short-time tensile force	Longitudinal	[[.].]/]	≥ 331,3	-	100 10 100 1
transmission of the reinforcement	Transversal [kN/m]	≥ 331,3	-	ISO 10406-1	

Other key values	Unit	Value	Tolerance	
Recommended maximum grain size in concrete	[mm]	16	-	

Standard goods variety		Unit	Value	Tolerance
Grid	Length	[]	6,0	± 16 mm
	Width	— [m]	2,30	± 12 mm

Single grids up to 3.0 m wide on request.

Transport and storage conditions

Non-metallic reinforcements from solidian GmbH must not be damaged during transport, storage, processing and installation and must not be exposed to temperatures higher than 80°C. They must be stored in a dry place, protected from the weather and without touching the ground. They must be stored dry, protected from the weather and without touching the ground. They must be protected from UV radiation and moisture until concreting and must be free from bond-reducing impurities (e.g. grease, soil, loose concrete residue).



Product page

https://solidian.com/products/solidian-grid-carbon-mats/

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Measurement

Specified values were determined on the product itself. Deviating properties may occur in the structural component or during processing. We recommend checking the values by suitable structural component tests with the concrete formulation used in each case.

Tests

As part of our in-house production control, two test units with 6 tensile tests each per reinforcement direction are carried out for each production order for quality assurance purposes, from which the characteristic short-term tensile strength is determined. All other measured values are determined as part of a comprehensive product qualification and are not subject to continuous control.

The described tensile tests per production order are included in the quotation costs. If you need an extended production control for your construction project, please contact us. We will be happy to provide you with a non-binding quotation for additional production-related tests.

Country-specific regulations

The use of the product is governed by the respective national regulations at the place of use, in Germany for example the building codes of the federal states, and the technical provisions based on these regulations.

The design is generally carried out in accordance with the applicable standards for reinforced concrete components, although adjustments must be made for fiber composite plastic reinforcements if applicable standards, guidelines, etc. for fiber composite plastic reinforcements are not available. Accordingly, the respective national standards and regulations must be taken into account in the design.

Processing information

All work must be carried out by trained/instructed personnel only. Damaged fiber bundles (resin spalling, brittle areas, etc.) must not be installed, as the specified load-bearing capacity cannot be guaranteed. The specified values of the product, in particular with regard to tensile strength, only apply if the product is used as intended.

For further information, please refer to the current Technical Information for our solidian GRID reinforcement mats (www.solidian.com/downloads).

Ecology and health protection

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Industrial safety and health

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Legal information

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