SC 1-F

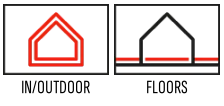
Fiber reinforced, ready-to-use, shrinkage-compensated cement based screed with outstanding compressive strength

CE
CEMENT SCREED
EN 13813
DESIGNATION
CT-C35-F7-A1fl

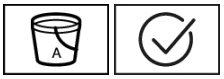
CE marking:
→ EN 13813 • Cement screed designation:
CT-C35-F7-A1fl

TECHNICAL FEATURES

FIELD OF APPLICATION



APPLICATIONS



Description

SC 1-F is a premixed cementitious powder that, with only the addition of water, results in an ideal screed for the creation of medium-quick hardening and highly reduced shrinkage subfloors, suitable for both indoor and outdoor use, specifically for the installation of resilient coatings and resins.
The presence in the mass of SC 1-F of semi-structural fibers (30 x 1) mm made of alkalinity-resistant polymer material reduces the formation of cracks during maturation and increases the resistance to impact and load.

CE Marking

► EN 13813
SC 1-F complies with the principles envisaged in the EN 13813 standard (“Screed material and floor screeds - Screed materials: Properties and requirements”) with the following designation:
→ *CT – C35 – F7 – A1-fl*
• Cement screed (CT)
• Compressive strength: 35 MPa (C35)
• Flexural strength: 7 MPa (F7)
• Reaction to fire (Euroclass EN 13501-1): A1-fl

Colour

SC 1-F is available in the following versions:
• GREY

Field of application

► Creation of medium-fast drying screeds with high compressive strength (from 30 to 40 MPa depending on compaction) in adhesion to the slab or floating on sliding sheet.
SC 1-F is the ideal product for the realization of:
• Screeds for balconies, terraces and flat roofs.
• Radiant floor screeds (thermal conductivity λ = 1.9 ± 0.2 W/(m-K)).
• Low thickness (minimum 2 cm) composite screeds (in adherence to the slab).
• Floating screeds (on sliding sheet) with a thin thickness (2.5 cm).
• Composite screeds (if well compacted) for garages to be covered with resins or tiles.
• Composite or floating screeds for the installation of solid wood.

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► Heating floors
The almost total absence of air in the hardened mix (due to its special grain size curve and if well compacted) gives the SC 1-F screed the special characteristic of insignificant shrinkage and expansion movements, combined with its high heat transfer capacity (thermal conductivity λ = 1.9 ± 0.2 W/(m-K)).
SC 1-F is not chemically aggressive against common types of piping used in heating systems (PEX, multilayer pipes PEX/Al/PEX etc.).
The normal thickness of screed SC 1-F is (5-6) cm, however, this product is suitable for various thicknesses, up to a minimum of 2.5 cm for floating laying on slip sheet and 2 cm overlay in radiant floors with subsequent laying of marble or large-format porcelain tile.
In the case of solid parquet laid with glue, the minimum thickness recommended on radiant floors is 4 cm.
As per the state of the art after the screed has been made and the 14 days from practice (or more, if possible) to reach more than 90% of the mechanical performance of the binder has elapsed, the heating should be turned on (slowly) and then allowed to cool down, before proceeding with the laying of the coatings.

Advantages

The screed SC 1-F:
• Achieves excellent compressive strength in a relatively short time.
• It is ready to use.
• It can be applied either in thin layers (minimum 2 cm thick) as an adherent screed or as a floating screed in layers min. 3.5 cm thick;
• Very low shrinkage.

Specific preparation of the laying substrate

► *Preparation of the support for floating screed.*
• Spread a waterproof sheet with a minimum thickness of 200 microns, with the edges overlapped by about 20 cm, or a geotextile with a minimum weight of 100 g/m² on the laying surface.
• Isolate the casting from contact with the perimeter walls and pillars (if present) by placing a strip of foam material, 3-5 mm thick.
• Cast the screed with a thickness of not less than 2.5 cm.
Based on the lift performance and especially the seamless hatchings required by design, insert a steel mesh reinforcement from screeds if necessary.
►*Preparation of the substrate for the collaborating screed*
• Remove from the surface any substance or compound that may prevent the adhesion of the screed.
• Prepare a grout consisting of about 1 part by weight of GROVE PRIMER ECO and 3 parts by weight of SC 1-F.
• Apply the grout to the laying surface with a scrubbing brush.
• Fresh on fresh, sprinkle the treated surface with the screed mixture SC 1-F already kneaded with to avoid stepping on the grout that is not yet dry.
• Proceed with the laying of the screed within a few minutes, taking care of compaction and flatness with an appropriate screed.

Product preparation

► *With continuous mixer*
• Pour the bags of SC 1-F into the mixer and start mixing.
• Adjust the water flow until you get the consistency of damp soil.
• Unload the material and proceed with spreading, compacting and staging.

► *With pressure pump*
• Adjust the machine for optimal mixing and pushing.
• Pour in enough SC 1-F for one charge, add water until you get the consistency of damp earth and leave to knead for a maximum of 2 minutes.
• Unload the material and proceed with spreading, compacting and staging.

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► *In concrete mixer with fixed body and rotary tool*

• Pour the water needed for the mixture into the concrete mixer equal to (1.75-1.90) L per 25 kg bag of SC 1-F.
• Add 8 bags of product and stir for (60-90) seconds.
• Check that the dough has a consistency of damp earth.
• Unload the material and proceed with spreading, compacting and staging.

► *In concrete mixer with rotating body*

• Pour the water needed for the mixture into the concrete mixer equal to (1.75-1.90) L per 25 kg bag of SC 1-F.
• Add 7 bags of product and stir for (60-90) seconds.

Product application

► *Casting and finishing*

• Dump the fresh mixture onto the surface and spread it with a rake or shovel.
• Step on the material to compact it and remove excess air.
• Make guides and, when cool, adjust the product using strips of width (3-4) cm, possibly equipped with handles for a comfortable grip.
• Compact the last surface layer by "crawling" the slightly inclined screed on the surface.
• As soon as it begins to harden, smooth the screed with a flat steel disc machine, spraying (if necessary) a little water on the surface to obtain a total closure of the porosity.

► *Operational Notes*

• For floating screeds, installing an electro-welded reinforcement mesh in the lower third of the screed certainly improves its performance and helps to prevent cracking due to shrinkage when joint-free large-size (above 40 m²) portions must be made.
• The permissible geometric shapes for backgrounds in order to minimize the risk of cracking are:
→ squares;
→ rectangles;
→ triangles.
• In the case of L- or T-shaped surfaces, it is necessary to insert a screed steel mesh (3 mm wire, 10x10 cm mesh) transversely to the direction of the joining of the two corners of the L or T structure (Fig. 1):

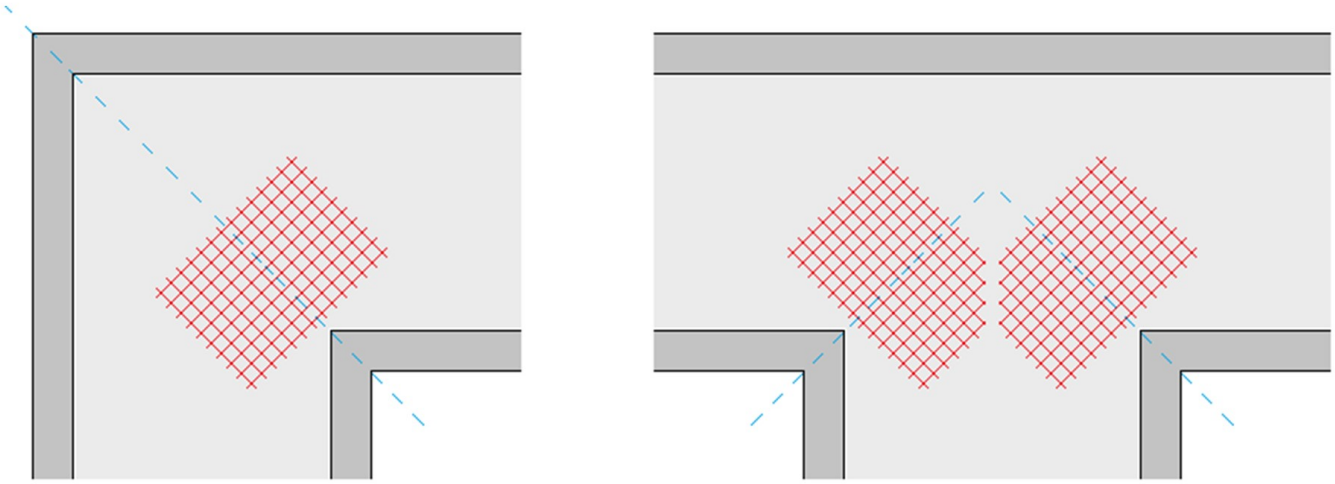

Fig. 1: Insertion of reinforcement mesh into L or T structures

• In case of interruption in the laying of the screed, it is necessary to insert a piece of electro-welded mesh from screeds (3 mm wire, 10x10 cm mesh) to avoid the formation of a joint along the line of the next rework (Fig. 2):

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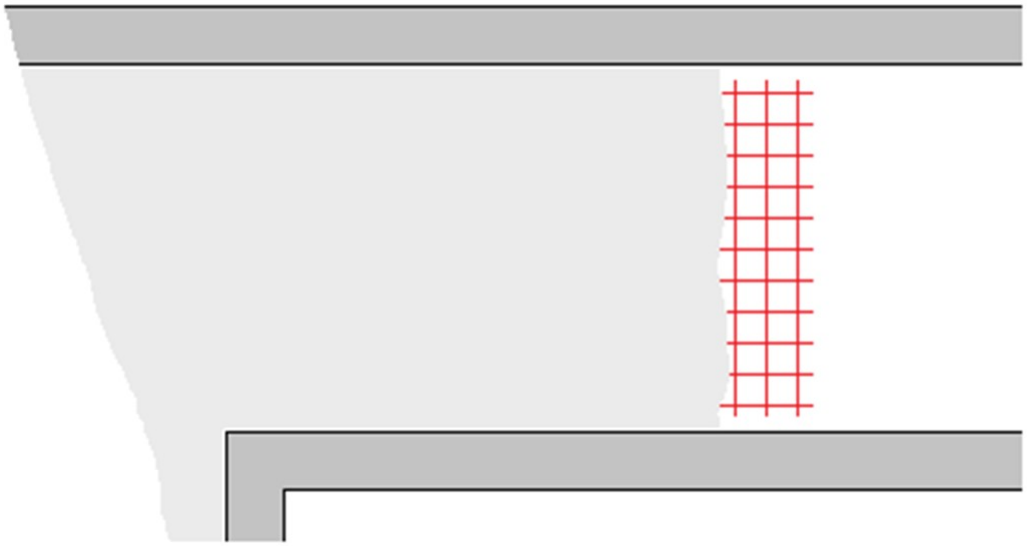

Fig. 2: Insertion of reinforcing mesh in case of re-casting

• Above pipes or ducts, it is necessary to reinforce the screed with a hexagonal fine wire mesh (minimum thickness of screed above pipe not less than 2 cm) to prevent cracking with crack formation (Fig. 3):

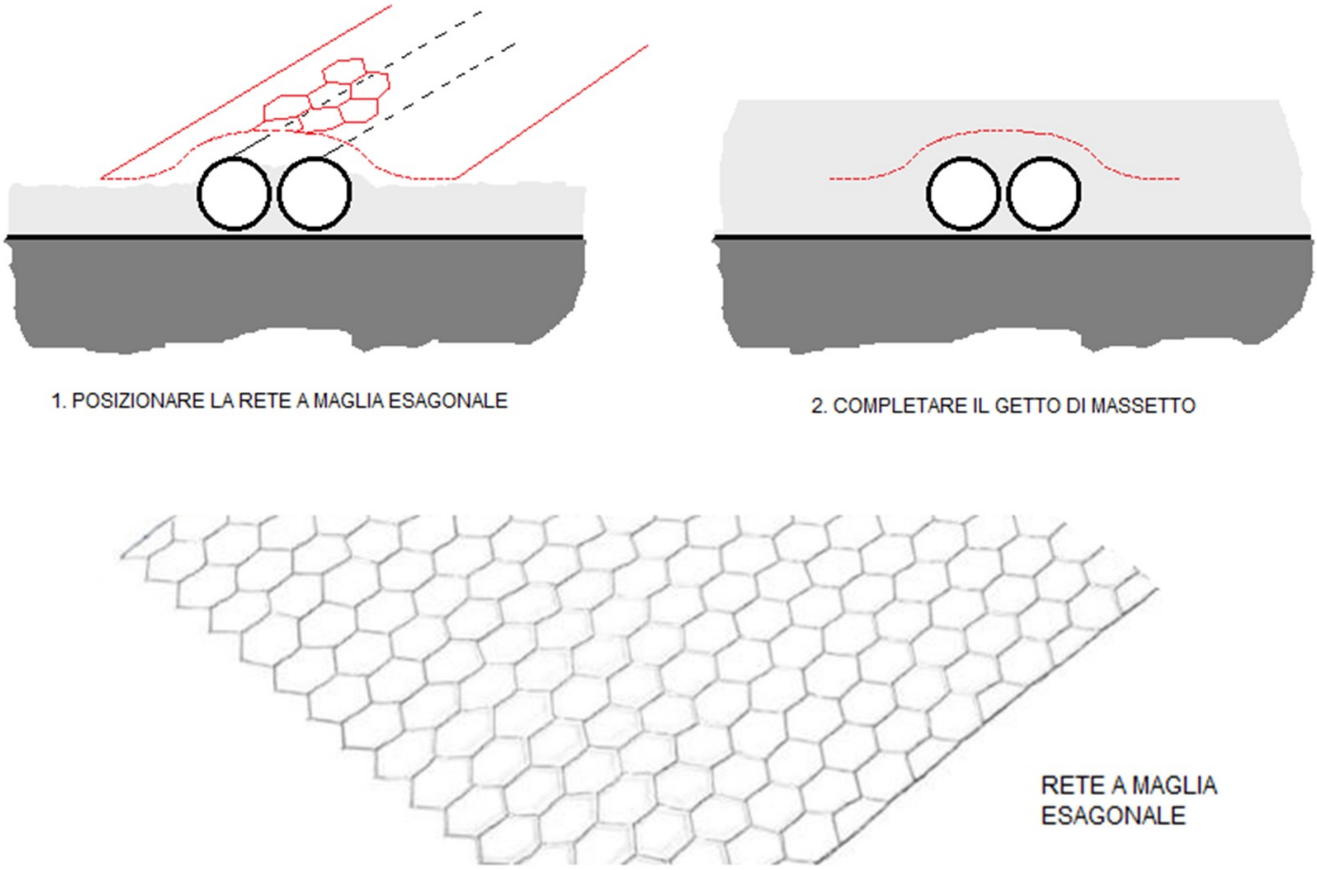

Fig. 3: Insertion of reinforcement mesh over pipes or ducts

• In the case of re-casting, it is necessary to insert a piece of electrowelded mesh between the two ends of

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the casting, so as to avoid the formation of a joint.

► *Drying times*

Under ideal temperature conditions, wait after pouring the screed:
• 36 hours for the installation of waterproofing agents of the BETONGUAINA series, ceramic tiles with quick adhesives and epoxy water-based resins.
• (72-96) hours for laying natural and synthetic stones.
• (120-144) hours for laying rubber, carpet and wood floors.

► *To further accelerate ripening:*

• Add FAST FLUID 300 to the dough preparation, reducing the water.

► *To accelerate ripening at low temperatures (down to -8°C):*

• Add FAST FLUID 300 and FAST FLUID AG during the preparation of the dough, reducing the amount of water.

Consumption

type of application	minimum consumption	maximum consumption	u.m.	notes
To obtain 1 cm of hardened screed	18	20	kg/m²	(1)

(1) Consumption referred to the product in powder form.

Tool cleaning

• Fresh product: cleaning with water (also hydrowashing).
• Hardened product: mechanical removal.

Useful tips for laying

• Store bags of SC 1-F in the shade before use.
• The closed and sealed at the origin pallet can be stored outside (it does not fear the rain) until the expiry date; If, on the other hand, the pallet has already been opened, take care to store the bags sheltered from rain and humidity.
• Strictly respect the mixing times and the amount of mixing water specified in "preparation of the mixture".
• If the cement setting occurs while spreading the mixture, do not add water to recover the product.
• Read the Safety Data Sheet carefully before use.

Technical Data

► PRODUCT IDENTIFICATION DATA		value
Consistency	-	Powder
Color	-	Grey
Solid residue	-	100%
Particle size distribution, EN 933-1	Mm	≤ 2,5

VIA FORNACE VECCHIA, 79
31058 SUSEGANA (TV) - Italy
Tel +39 0438 437511
www.nordresine.com
info@nordresine.com

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► APPLICATION DATA AND FINAL PERFORMANCE		value
Bulk density of fresh mixture, EN 1015-6	kg/L	2,10 ± 0,05
Mixing water (in %)	-	(7,0 – 7,6)%
Mixing water (per 25 kg bag)	L/bag	1,75 – 1,90
Fresh mixture pot-life	Min	90 - 120
Application temperature	°C	+5 to +35
Minimum thickness applicable overpipe, in radiant floor	Mm	20
Minimum applicable thickness, as floating screed on sliding cloth	Mm	25
Minimum applicable thickness, for subsequent coating with parquet laid with glue (radiant floor)	Mm	40
Minimum maturation time for laying ceramics	Hours	24
Minimum maturation time for laying terracotta and natural stones	Hours	72
Minimum ripening time for laying wood, vinyl, rubber, carpet	days	10
Thermal conductivity λ, EN 12664 *	W/(m·K)	1,9 ± 0,2

► TECHNICAL DATA IN ACCORDANCE WITH EN 13813		value
Compressive strength (28 days), EN 13892-2	Mpa	37 ± 1
Flexural strength (28 days), EN 13892-2	Mpa	7,9 ± 0,2
Reaction to fire (Euro-class), EN 13501-1	-	A1-fl

NOTES

* The determination was performed with a physical model compatible with that contained in the reference standard EN 12664.

Product storage

• 12 months in the original closed packaging, in a dry, covered environment, protected from sunlight and at a temperature between +5°C and +35°C.
• Keep in a dry place.

Packaging

VARIANT	PACKAGE	ADR	PACKAGE / PALLET	COMPONENTS	*NOTES*
-	bag - 25 kg	NO			

ADR legend:

NO = NON-DANGEROUS goods

P* = DANGEROUS goods packed in limited quantities (packed as per ADR Chapter 3.4)

Sì = DANGEROUS Goods

LEGAL NOTES

Any advice concerning the methods of use of our products reflects the current state of knowledge and does not imply any guarantee and/or responsibility as to the outcome of the application. Consequently, the customer must verify the product's suitability for the intended use and purposes by testing the product in advance. The Internet website www.nordresine.com contains the latest revision of this technical sheet: in case of any doubts, verify the date of revision (where missing, use the date of issue) by consulting the "PRODUCTS" section.

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VIA FORNACE VECCHIA, 79
31058 SUSEGANA (TV) - Italy
Tel +39 0438 437511
www.nordresine.com
info@nordresine.com