

# MACHINE BASE GROUT

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## PRODUCT

TARGET<sup>®</sup> Machine Base Grout is a premium quality non-metallic, non-shrink grout designed for use under severe service conditions. The grout consists of a precisely proportioned blend of Portland cement, stable natural aggregates, supplementary cementing materials including silica fume, expansion agents and special water reducing admixtures. The expansion agents are designed to give shrinkage compensation in both the plastic and hardened states, and include a crystal growth material to compensate for drying shrinkage. The grout is formulated to reduce the amount of mixing water required to give flowable mixes. The grout can be placed at dry-pack, plastic, flowable or fluid consistencies as defined in ASTM Standard C1107.

## USES

TARGET Machine Base Grout is suitable for a wide range of cementitious grouting operations - from the most demanding non-shrink precision grouting to routine work. Typical grouting applications include:

- Pulp and paper machine sole plates.
- Under heavy machinery which transmits high stress to the grout, including milling machines and printing presses.
- Base plates of equipment with dynamic loading.
- Column base plates.
- General machine base grouting.
- General grouting where the grout can be exposed to mild or moderate concentrations of many industrial chemicals. If required, the grout can be supplied with sulphate-resistant cement.
- Most situations where a fluid, sanded grout is needed.
- Any situation where protection of embedded steel against corrosion is required.
- Patching or filling blockouts, and general concrete repairs.
- Installing anchor bolts or tie rods.

## ADVANTAGES

The major advantages of TARGET Machine Base Grout include:

- Can be used at any consistency from dry-pack to flowable.
- Contains no metallic aggregates, making it suitable for service under wet or wet/dry conditions.
- Suitable for voids with least dimensions as small as 6mm (0.25 inch).
- Surface temperatures from below freezing to +150°C (328°F) are acceptable after curing as directed.
- Confinement is not essential - may be placed with exposed surfaces.
- Conforms to ASTM C1107 Type C expansion, both before and after initial set.

Product performance is affected by many factors, including storage, method and conditions of application and use. User testing is ESSENTIAL to determine suitability of product for intended method of application and use. Target's SOLE WARRANTY is that the product has been manufactured to specifications. No oral or written information or advice shall increase this warranty or create new warranties. Target's SOLE LIABILITY is to replace product proved defective. In no event shall Target be liable for any consequential, indirect or other damages whether arising from negligence or otherwise.

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## PROCEDURES

### SURFACE PREPARATION

1. Remove all laitance, loose material, grease, oil and other contaminants from surfaces that will be in contact with the grout. Water blast or sandblast if necessary.
2. Saturate the substrate with clean water for 24 hours prior to grouting. Just before grouting, remove all excess water and allow the substrate to become saturated surface-dry or surface-damp when the grout is placed.

### MIXING

- **ALL CASES:**

Always add dry grout to water and mix to a uniform consistency, scraping the sides of the container as necessary. Mix continuously for a minimum of 3 minutes before use and continue mixing during placement. Use the grout within 30 minutes of the start of mixing. The temperature of the mixed grout should be 10°C to 25°C (50°F to 77°F).

- **FOR FLUID CONSISTENCY:**

To ensure adequate mixing of the grout use a high shear mixer such as a Jiffler mixer. Use, approximately 4.75 liters (1.25 US gallons) of water per 25 kg (55 lb) bag of grout to produce a fluid mix. The actual amount of water required will vary with the temperature of the mix. DO NOT use water contents of more than 5.3 liters (1.4 US gallons) per bag. If stiffening of the mix occurs, retempering with water within 20 minutes of the start of mixing is acceptable provided the recommended total water content is not exceeded.

- **FOR PLASTIC OR DRY PACK CONSISTENCY:**

Use a mortar mixer or equivalent and reduce the water content of the mix to achieve the required consistency. The first part of each batch should be mixed to a flowable consistency, then dry grout and more water can be added as necessary until the specified consistency is obtained.

### PLACING

- Ensure the surfaces that will be in contact with the grout have been prepared as detailed in "Surface Preparation" and that no free water is present.
- For flowable mixes use form work and header boxes in accordance with standard grouting practices to ensure that grout is able to fill the voids totally. Flowable mixes can be placed by gravity flow or by pumping.
- Always place grout from one side of a void to allow air to be expelled ahead of the grout. Where necessary provide vents so that air will not be trapped.
- Use straps or light tapping if necessary to assist the flow of grout into voids. Machine Base Grout will normally flow into most voids without assistance. DO NOT use insertion vibrators.
- For dry-pack mixes ensure the voids are totally filled and the grout is properly compacted. NOTE: Consult your TARGET technical representative for guidance in difficult or complex grouting jobs.

### CURING

- Maintain base plate, substrate and grout temperatures in the range 5°C to 35°C (41°F to 95°F) for at least 72 hours after grouting.
- Exposed grout surfaces should be kept moist for at least three days after grouting.

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Alternatively, the use of curing compounds meeting the requirements of ASTM C309 is permitted after 24 hours of moist curing in situations where the ambient temperature and grout temperature do not exceed 25°C (77° F).

## CAUTION

- Ambient temperatures should be between 10°C (50°F) and 30°C (86°F). Cooler temperatures will retard the rate of strength gain particularly in flowable mixes. If grouting is to be carried out at cooler temperatures contact your TARGET representative for special procedures.
- Foundation and base plate temperatures should be kept above 5°C (41°F) and below 35°C (95°F) for at least 72 hours after grouting. contact your TARGET technical representative for advice on procedures and products for grout installation under colder conditions.
- If the minimum dimension of the grout is 150mm (6 inches) or more, clean pea gravel should be added to the mix at up to 30% by weight of the original grout weight or TARGET Flowcrete can be used.
- Contact your TARGET representative for specific job recommendations.

## PACKAGING

TARGET Machine Base Grout is supplied in 25 kg (55 lb) bags. Custom packaging for larger projects is available on request.

## YIELD

At fluid consistency, yield and quantity estimating values (excluding wastage allowance) are:

0.014 m <sup>3</sup> /bag	72 bags/m <sup>3</sup>
0.49 ft <sup>3</sup> /bag	55 bags/yd <sup>3</sup>

These values are based on standard 25 kg (55 lb) bags.

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## TYPICAL PROPERTIES OF TARGET MACHINE BASE GROUT

PHYSICAL PROPERTY	TEST METHOD		MIX CONSISTENCY			
	Canada	USA	Fluid *	Flowable	Plastic	Dry Pack
<b>WATER DEMAND</b> kg/kg Liters/25 kg bag US gal/55 lb bag	- - -	- - -	0.195 4.87 1.28	0.17 4.25 1.12	0.155 3.87 1.02	0.12 3.00 0.79
<b>FLUIDITY</b> , sec  Flow, %	CSA-A23.2-1B	ASTM C939  ASTM C827	20-50	-  131	-  106	-  Forms a ball
<b>EXPANSION</b> , % Volume  After Final Set at 3 days at 14 days at 28 days	CSA-A23.2-1B  -	ASTM C940 (Modified)  ASTM C1090  CRD-C621	1.2  0.07 0.07 0.09	1.0  0.03 0.04 0.07	1.2  0.03 0.03 0.06	N/A  N/A
<b>BLEEDING</b> , % Volume	CSA-A23.2-1B	ASTM C940 (Modified)	None	None	None	None
<b>COMPRESSIVE STRENGTH</b> , MPa (psi) at 24 hrs at 3 days at 7 days at 28 days	CSA-A23.2-1B	ASTM C109 ASTM C942	18.6 (2700) 35.2 (5100) 50.4 (7310) 64.5 (9350)	20.6 (2990) 38.8 (5630) 50.8 (7370) 65.5 (9500)	24.5 (3550) 41.5 (6020) 53.5 (7760) 65.1 (9440)	34.5 (5000) 64.3 (9320) 74.4 (10768) 98.4 (14270)

\* Flow cone tests for mix consistency in accordance with ASTM C939 do not adequately describe the flow characteristics of thixotropic grouts such as TARGET Machine Base Grout compared to normal Hydraulic Portland Cement grouts. Flowable TARGET Machine Base Grout would be of equivalent consistency to a fluid Hydraulic Portland Cement Grout.

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