



# PRO FLEX SET® SAG-SLUMP RESISTANT

## 2. MANUFACTURER

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## 3. PRODUCT DESCRIPTION

PRO FLEX SET® is a **standard-grade**, ultra-creamy, polymer-modified, single-component, **sag-s slump resistant** thin-set mortar designed for the installation of ceramic, porcelain and most natural stone products over suitable, well-prepared substrates.

### Features

- ◆ Slump resistance properties
- ◆ Sag resistance properties can be obtained (see mixing recommendations)
- ◆ For setting normal and large format non-vitreous, semi-vitreous, vitreous and impervious ceramic and porcelain tiles, mosaics, pavers and quarry tiles
- ◆ For setting most marble, granite and natural stone (see LIMITATIONS)
- ◆ For INTERIOR and EXTERIOR installations
- ◆ For institutional, commercial and residential floor and wall applications
- ◆ Meets or exceeds ANSI A118.4 E and ANSI A118.11 requirements
- ◆ Contributes to LEED® objectives and requirements

### Packaging

22.7 kg (50 lb) bag; grey or white



Concrete

Exterior-Grade Plywood



### Suitable Substrates

- ◆ Dry, completely cured concrete (at least 28 days old)
- ◆ Concrete and masonry blocks
- ◆ Cement backer units (CBU)
- ◆ Cementitious screeds, rendering, leveling coats and mortar beds
- ◆ PROMA's PRO MBR XD, waterproofing and PRO CBM 2, crack-isolation membranes
- ◆ Gypsum wallboard (INTERIOR dry areas only)
- ◆ Double layered EXTERIOR Grade Douglas Fir Plywood, certified CANPLY (SELECT) or (SEL-TF) CSA 121, minimum 32 mm (1 1/4") total thickness, for INTERIOR Residential Light-duty Floors and countertops, in dry areas only.
- ◆ Cementitious Terrazzo floors\*

\* With adequate prior preparation as indicated in PROMA's "SURFACE PREPARATION GUIDELINES"



## Limitations

- ♦ For setting EXTRA-LARGE / EXTRA-THIN units (above 24" x 24" [60 x 60 cm] and less than 3/16" [5 mm] thickness), please contact our Technical Service Department for appropriate recommendations.
- ♦ Do not use as a medium bed mortar. Final mortar thickness not to exceed 3/8" (9.5 mm) once tile has been set.
- ♦ Do not use at temperatures below 10°C (50°F) or above 35°C (95°F).
- ♦ Do not apply directly over particleboard, chipboard, presswood, Lauan, masonite, OSB, Gypsum-based leveling and patching compounds and all dimensionally unstable or non-recommended substrate materials.
- ♦ Do not use for the installation of green marble and other moisture sensitive stones that react to standard cement mortars and setting materials containing water. Instead, for setting these stones use **EXCLUSIVELY** PRO GROUT XTREME™ or PRO SEAL & SET 100 NS™ (see the respective technical data sheet). For the installation of white, pastel or translucent marble, use only PRO FLEX SET™ White.
- ♦ Do not use for installing glass tiles. For such installation, set tiles instead with PRO HPX® or PRO SUPERLITE™ MORTAR (see respective technical data sheets for more details). **Note:** if the glass tile has an epoxy finish backing and no synthetic mesh, set tiles exclusively with PRO GROUT XTREME™ White (see respective technical data sheet).
- ♦ Do not use for installations submitted to prolonged water contact, immersion or high humidity level (e.g. pools, gang showers, fountains, steam rooms, spas, etc.). In such cases, set tiles instead with a mixture of PRO BOND™ and PRO BOND PLUS™ additive; or with PRO HPX® or PRO P-151 RAPID™ (see respective technical data sheets for details).
- ♦ Do not use where high moisture and hydrostatic conditions and/or recurring moisture problems exist.

## 4. TECHNICAL DATA

### Applicable Standards

For Additional Information, please refer to the most recent TCNA handbook for ceramic tile installation or the TTMAC Specification Guide 09 30 00 Tile Installation Manual, or visit our website at [www.proma.ca](http://www.proma.ca).

| WORKING PROPERTIES (@23° C [73° F] and 50% RH) |               |
|--|---------------|
| Pot life                                       | > 1 hour      |
| Open time                                      | ≥ 30 minutes  |
| Initial cure                                   | 16-18 hours   |
| Final cure                                     | 28 days       |
| Adjustability                                  | 35-45 minutes |

| PHYSICAL PROPERTIES (@23° C [73° F] and 50% RH)      |  |                      |
|--|--|----------------------|
| VOC content  | 0 g/L  |                      |
| ANSI A118.4 E - EXTENDED OPEN TIME                   |  |                      |
| Specification  | Results  |                      |
| ≥ 75 psi (0.5 MPa) @30 minutes                       | PASSED   |                      |
| Shear strength per ANSI A118.4 tests (at 28 days)    |  |                      |
| Test   | Specification  | Results              |
| Porcelain tiles                                      | > 200 psi (1.3 MPa)  | ≥ 250 psi (1.7 MPa)  |
| Quarry tile to quarry tile                           | > 150 psi (1.03 MPa)   | > 200 psi (1.3 MPa)  |
| Shear strength per ANSI A118.11 tests (at 28 days)   |  |                      |
| Test   | Specification  | Results              |
| Quarry tile to plywood                               | > 150 psi (1.03 MPa)   | ≥ 201 psi (1.38 MPa) |
| Approximate coverage per 22.7 kg (50 lb) bag         |  |                      |
| Notched trowel                                       | Coverage   |                      |
| 6 x 6 x 6 mm (1/4" x 1/4" x 1/4")                    | 7.5 m <sup>2</sup> (80 ft <sup>2</sup> )   |                      |
| 6 x 10 x 6 mm (1/4" x 3/8" x 1/4")                   | 6.0 m <sup>2</sup> (65 ft <sup>2</sup> )   |                      |
| 12 x 12 x 12 mm (1/2" x 1/2" x 1/2")                 | 3.7 m <sup>2</sup> (40 ft <sup>2</sup> )   |                      |
| 19 x 14 x 10 mm (3/4" x 9/16" x 3/8") U-notch trowel | 3.2 m <sup>2</sup> (35 ft <sup>2</sup> )   |                      |
| 19 x 16 x 8 mm (3/4" x 5/8" x 5/16") U-notch trowel  | 2.5 m <sup>2</sup> (27 ft <sup>2</sup> )   |                      |
| Shelf life   |  |                      |
| 22.7 kg (50 lb) plastic bag, grey                    | 24 months if kept in its original unopened packaging and stored in a dry location. |                      |
| 22.7 kg (50 lb) bag, white                           | 12 months if kept in its original unopened packaging and stored in a dry location. |                      |





## 5. INSTALLATION

### Surface Preparation

(Refer to PROMA Surface Preparation Guidelines for complete details)

**Note: PRO SUPERPRIME 1C™ or PRO SUPERPRIME™ can be used to ready nearly any surface for PROMA setting materials without the need for scarifying or shotblasting, saving valuable time and money (see respective technical data sheet for details).**

- ♦ All supporting surfaces must be structurally sound, solid, stable, level, plumb and true to a tolerance in plane of 1/4" in 10'-0" (6 mm in 3 m) in accordance with ANSI A108 Specifications requirements.
- ♦ Surfaces must be clean and free of dust, oil, grease, paint, tar, wax, curing agent, primer, sealer, form release agent or any deleterious substance and debris which may prevent or reduce adhesion.
- ♦ Acids, concentrated alkaline conditions and cleaning chemical residues must be neutralized or removed.
- ♦ All concrete substrates must be completely cured (at least 28 days old), solid, sound, slightly textured and have a direct tensile cohesive strength greater than 1.2 MPa (175 psi) when tested in accordance with ACI 503 R – (Appendix A) procedure.
- ♦ On grade or below grade concrete slabs must be installed over an effective vapor barrier.
- ♦ All concrete substrates must be dry and free of hydrostatic conditions and/or extreme moisture problems. Perform a calcium chloride moisture emission test (ASTM F-1869) on the concrete substrate before proceeding with the installation of the floor.
- ♦ Smooth concrete substrate surfaces must be either PRIMED with PRO SUPERPRIME primer OR mechanically roughened in accordance with an engineer-approved procedure (shot-blasting, scarification, grinding, sand or water-blasting, etc.) to provide sufficient surface texture and profile for adequate bonding of the product.
- ♦ For ceramic and porcelain tiles up to 30 x 30 cm (12" x 12"), the structural design of the wood substrate must not allow a deflection greater than L/360 when tested to 136 kg (300 lb) concentrated loads in accordance with ASTM C627 Standard test method. For square and rectangular tiles with one edge dimension 38 cm (15") and 45 cm (18") up to 58 x 58 cm (23" x 23") the maximum deflection should not exceed L/540 unless an effective CIM (crack isolation membrane) is used in the installation system. **For tiles 60 x 60 cm (24" x 24") or larger and for ALL dimension stone installation, the maximum deflection must not exceed L/720.**

**Note:** Do not overheat floors or basement during cold season construction. These conditions could cause the product to cure too rapidly and affect its performance.

### Mixing

**Mixing Ratio: 2 3/4 parts powder to 1 part water ... up to 2 1/2 parts powder to 1 part water (by volume)**

1. Use clean mixing-tools and containers.
2. In a clean mixing container, measure and pour **between 5.3 L (5.6 quarts / 1.4 US gal) to 5.9 L [6.2 quarts / 1.56 US gal]** of cool clean water and gradually add 22.7 kg (50 lb) of PRO FLEX SET powder mix, while mixing slowly.  
**NOTE: Some sag/slump resistance properties can be obtained when the water ratio is kept to its minimum recommended level.**
3. Using a low-speed mechanical mixer (150 - 300 rpm), mix until a homogeneous, smooth, lump-free, consistency is achieved.
4. Let the mortar sit approximately 10 minutes; remix without adding any more water or powder-mix.
5. The product is now ready for setting.
6. During the setting, keep the mortar-mix fresh & smooth by periodically re-stirring the inside of the bucket without ever adding water.
7. Clean tools and hands with water while the mortar is still fresh.

### Application

1. Pressure-apply the mortar with the flat edge of the recommended notched-trowel to promote a positive bond and completely cover the substrate.
2. **IMMEDIATELY AS YOU GO** (without delay) and before skinning or drying occurs, apply a sufficient mortar layer and, using the notched side of the trowel, ridge in a straight-line directional pattern to achieve an even setting bed. For walls, maintain ridges running in a horizontal directional pattern. **For large format tile installation on floors, it is highly recommended to back-butter each individual large-format tile completely with fresh mortar and to apply them without delay over the freshly-applied ridged mortar bed to ensure proper transfer.**
3. Do not spread more mortar than can be covered with tiles within 30 minutes.
4. If the mortar dries or skins-over, it must be removed and replaced with fresh mortar.
5. Place tiles firmly with a slight back and forth motion across ridges and tamp tiles repeatedly to achieve at least an 85% mortar contact with the tile back (95% in wet areas, commercial floors and exterior installations and 100% for natural stone installation).
6. Tiles should be embedded in the mortar to at least 1/3 of their thickness.
7. Remove excess mortar from grout space and wipe-off blotches and smears immediately while mortar is fresh.

### Expansion and Control Joints

- ♦ Install control joints where tiles abut restraining surfaces, around the perimeter of the work and at the base of columns and curbs.
- ♦ Install and space expansion and control joints in all directions in accordance with TCNA HANDBOOK FOR CERAMIC TILE INSTALLATION Detail #EJ-171 recommendations, or TTMAC Specification Guide 09 30 00 Detail #301-MJ recommendations. CAUTION: DO NOT cut EXPANSION JOINTS in after the tiles have been installed. Install tiles normally and stop when the control joint location is reached. Cut the tile if required and resume setting from the opposite side of the joint. Before proceeding further, rake the joint and leave the tile and joint space clean.
- ♦ DO NOT FILL EXPANSION JOINT SPACE UNTIL GROUTING IS COMPLETED on the remainder of the job.
- ♦ Install a suitable industry-approved compressible bead and flexible sealant to caulk expansion and control joints. Follow the sealant manufacturer's installation instructions.

### Curing and Grouting

- ♦ Do not step on floors and protect area from foot traffic for at least 24-48 hours, depending on temperatures and humidity conditions.
- ♦ Protect walls from water contact, impact and vibration for at least 24 hours.
- ♦ Allow at least 16-24 hours from installation before grouting tiles.
- ♦ Protect all new installation from weather and freezing for at least 14-21 days.

**Note:** Extended protection and downtime requirements before grouting may be required depending on temperature and humidity conditions and on the porosity and size of the tile or stone being installed.

### Cleaning

Clean tools and hands with water while the product is still fresh.

### Health and Safety

Refer to the Safety Data Sheet (SDS) for complete details.



## 6. AVAILABILITY AND COST

PROMA products are widely available in Canada and the Northeast United States. To find a distributor of PROMA products, call **toll-free:1.866.51.PROMA (77662)**.

## 7. WARRANTY

PROMA warrants that this product is manufactured using quality raw materials and is of merchantable quality and suitable for the purpose for which it was intended. PROMA's liability under this warranty shall be limited to the replacement of its product proven to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising from the use of/or the inability to use this product.

## 8. MAINTENANCE

Product requires no special maintenance. Do not leave without floor covering or exposed as a resurfacing material.

## 9. TECHNICAL SERVICE

For more detailed information on this product, please contact our technical department for proper recommendations and job field assistance. **Toll-free: 1.866.51.PROMA (77662)**.

## 10. FILING SYSTEM

Additional information is available upon request, or by visiting [www.proma.ca](http://www.proma.ca).

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