



## Technical Data

Satisfies the following:

- **ASTM C109, Properties**
- **ANSI A118.4, Properties**
- **ANSI A118.15, Properties**

## Description

VBM thin bed mortars are polymer-modified thin-set mortars designed for bonding semi-vitreous and vitreous materials. While its non-sag properties increase production, VBM thin bed excels over other mortars in its class with superior efflorescence and water resistance.

## Uses

VBM thin bed bonding mortars are used for the installation of ceramic tile, quarry tile, thin brick, precast concrete, natural stone, manufactured stone, porcelain, certain glass tiles and similar veneers and pavers. Used for interior and exterior use cases in residential or commercial applications.

## Color

Stock colors are Natural Gray (that has no color) and Tan.

## Packaging

- 50 lb moisture-resistant bags (56/pallet)
- Store off ground in covered, cool, clean & dry location.
- Shelf life: 1 year from manufacture date.

## Approximate Coverage

- 80-95 Sq.Ft in 1/4" x 1/4" x 1/4" configuration (6 x 6 x 6mm)
- 60-70 Sq.Ft in 1/4" x 3/8" x 1/4" configuration (6 x 9.5 x 6mm)
- 35-40 Sq.Ft in 1/2" x 1/2" x 1/2" configuration (13 x 13 x 13mm)
- Per 50lb bag mixed with approx. 5 qts of clean water.

## Safety

Always review Safety Data Sheet (SDS) prior to using this product. Available at [ORCO.COM](http://ORCO.COM), or contact support.

## Support

For questions, technical support, order inquiries, and product information, call (951) 685-8498 or email [INFO@ORCO.COM](mailto:INFO@ORCO.COM).

## Substrates

The substrate must be structurally sound and conform to good engineering practices. Substrate deflection under all live, dead and impact loads, including concentrated loads must not exceed L/360 for thin bed installation or L/480 for thick bed stone installations, where L= span length. Installations shall be in accordance with applicable building codes. Movement joints shall be brought through mortar and veneer to the surface. All surfaces must be sound, clean, and free from any dirt, oil, paint, bond breakers, efflorescence or any contaminants which may hinder bond.

## Compatible Substrates

- Prepared concrete
- Concrete masonry (untreated)
- Cement plaster
- Cement mortar beds
- Gypsum board (Dry interior walls only)
- Existing ceramic tile & marble (prepared)
- Exterior grade plywood (Interior-w/R-FlexAd only)
- Portland cement backer board (Prepared)

## Technical Details

- Open time @ 70°F (23°C): 20 min
- Adjustability @ 70°F (23°C): 10 min
- Pot life @ 70°F (23°C): 2 hrs
- Compressive strength (ASTM C109): >2500psi

## Shear Bond ANSI 118.4 Requirements

- Glazed Wall Tile: 7 Days >300psi, Water Immersion >200psi
- Porcelain Tile: 7 Days >200psi, 28 Days >200psi

## Notes

- Apply in thin application (<1/2")
- Avoid applications in high heat, cold or wind.
- Do not apply when temperatures are below or expected to fall below 40° F prior to cure.
- Substrate must be sound - any cracks or excessive movement may telegraph through mortar or cause bond failure.
- Clean tools and tile with water prior to mortar curing.
- Never apply mortar over any expansion or control joints.
- Always perform quality control testing before and during application.
- Not recommend over particle board, plywood, luan, or hardwood floors.
- Not recommended for green marble or water-sensitive stone.
- Color may vary - always test a jobsite mockup when possible.



# Bonding Mortar (Thin Bed)

## OBP VBM Thin Set

### Mixing

- Add 50 lb. bag of mortar to approximately 5 quarts of clean potable water.
- Mix by hand or a low speed mixer. Do not over mix - high air lowers strength.
- Mix material thoroughly and allow to set for 10 minutes and then remix.
- Do not add additional water.
- For slurry bond coat application, mix with approximately 2 gallons of water per 50 lb. bag.

### Application

Apply mortar to the substrate with the flat side of a notched trowel. Firmly press mortar, keying into the substrate. Apply additional mortar using the notched side of the trowel. Spread only as much mortar as can be covered in 10-15 minutes. Use the correct size notched trowel to make sure veneers are fully embedded (100% coverage). Place tile or veneers into the wet mortar and beat into place. Do not apply to skimmed over mortar. Back butter large veneers and pavers for 100% coverage.

Mortar must be firmly pressed into the surface of the veneer and substrate to assure good contact and bond. Do not simply slide mortar onto the surface. Assure full coverage and bond by periodically removing and inspecting the back of tile. Periodically remove masonry unit shortly after installation to assure mortar is bonding to the veneer and the substrate. Tile or veneer that have been set for more than 10-15 minutes cannot be readjusted.

Joint Grout/Pointing Mortars such as MAC Plus Mortars (course sand) or VP Joint Grout (fine aggregate) is recommended. Allow bonding mortars to fully set (minimum 24 hrs) prior to grouting to assure bond is not disturbed.

### Substrate Application Details

- Lath and Cement Plaster – Lath and cement plaster shall conform to IBC, CBC, ASTM guidelines, and veneer manufactures requirements. Allow to cure 72 hours prior to application.
- Poured in place/tilt up concrete (Prepared) – Ensure all release agents and bond breakers are completely removed; mortar will not bond to surfaces with any bond breakers still on the substrate. This is best achieved by removal of the surface layer by bead blasting, grinding or equivalent. The substrate must still be checked to assure complete removal of any bond inhibiting substances. Smooth concrete must be roughened. High pressure washing is typically not adequate for complete removal of bond breakers or release agents. Concrete should be well cured. 28 days recommended.
- Cement backer board (Prepared) – All joints must be taped with fiberglass tape and joints filled with VBM Bonder, R-Lastic or equal. Consult cement backer board manufacturer for specific installation recommendations and limitations. A suitable substrate for bonding does not mean it is recommended for all veneer or job conditions.
- Ceramic tile substrates – Existing tile must be sound, well bonded, clean and free of any deleterious substance that may prevent adhesion. Smooth surface require roughening to promote bonding.
- Plywood substrates – Interior applications only. Use only over exterior grade plywood (EGP) 5/8" minimum. Wooden flooring should not have a deflection exceeding 1/360 of span in either dead or live loads. Securing should be done with screw-type nails and glue. A 3/16" gap for expansion should be left around the plywood sheets and surrounding materials. These gaps should be left empty after the installation. Replace the mix water with R-FlexAd latex additive.

# Bonding Mortar - OBP VBM Thin Set

## Warranty & Claims

ORCO manufactured articles are warranted for 1 year, conforming to standards and specifications ORCO certifies and publishes at the time of shipment. **ORCO MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED (INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES), OTHER THAN THE FOREGOING EXPRESS WARRANTY.** Products manufactured by others and sold by ORCO are solely warranted by the originating manufacturer. Use or installation of ORCO sourced product by the CUSTOMER shall be an admission by the CUSTOMER and conclusive proof that such articles are in every respect as warranted and shall release ORCO from any and all claims for damage or loss sustained by CUSTOMER. For product not yet installed, CUSTOMER must submit a written breach of WARRANTY notice within 7 calendar days of delivery. Upon ORCO's request, CUSTOMER is responsible for all costs incurred in returning product to the originating ORCO facility for evaluation. If ORCO's investigation supports the claim, the parties agree that CUSTOMER'S sole and exclusive remedies shall be replacement of the defective article or refund of the price of the defective article at ORCO's election. **IN NO EVENT SHALL ORCO BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.** Variations in color or shades of color, texture and site of aggregate are inherent in these products. Exact matches are never guaranteed. No claims will be allowed for these variations. Since natural gray products reflect the natural color of the raw materials used (no color is added during manufacturing), ORCO will reject any claim regarding gray color variation. Efflorescence (white powdery deposit) is a naturally occurring phenomenon and is not considered a defect. Samples of ORCO products are submitted as representative of type, color, shade, and texture. The products subsequently furnished may vary from such samples. ORCO will not be liable for and will not recognize any claims made after the start of installation on products said to be incorrectly sized or shaded, inconsistent texture, not matching prior shipments, or otherwise held to be unsatisfactory. Any charges incidental to inspection or tests made by or on behalf of the CUSTOMER to determine compliance with specifications shall be paid by the CUSTOMER. Natural elements - like sun, wind, and moisture - plus site specific conditions / applications may cause products to fade, which is never warrantable. All product weights and coverage / usage charts and listings are estimated. All product formulations and published product counts per pallet are subject to change without notice. ORCO does not obligate itself to furnish signed receipts for material delivered.

## Caution

This product should only be used outdoors. Protective face and eye protection, impervious gloves, long pants and long sleeve shirts are recommended. Use NIOSH approved mask for silica dust. Prolonged exposure to dust may cause delayed lung disease. Freshly mixed materials may cause skin irritation. Avoid direct contact where possible and wash exposed skin areas promptly. If any materials get into the eyes, rinse immediately and repeatedly with clean potable water and get prompt medical attention. See SDS sheet.

## ⚠ Warning

This product can expose you to Silica, crystalline (airborne particles of respirable size) which is known to the State of California to cause cancer. For more information go to [www.p65Warnings.ca.gov](http://www.p65Warnings.ca.gov).

