

NobleSeal TS[®] Sheet Membrane

Installation Instructions

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1. GENERAL INFORMATION

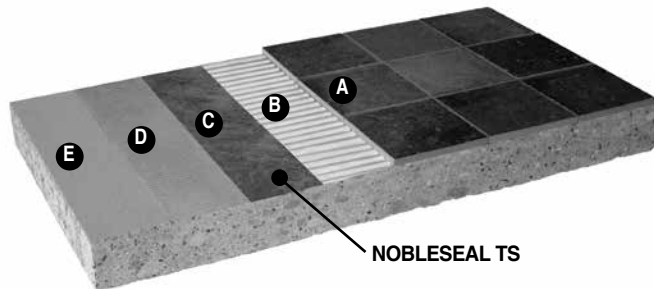
1.1 NobleSeal TS is a composite sheet membrane that provides thin-bed waterproofing and crack isolation for thin-set tile applications. NobleSeal TS may also be used to bridge control joints. It is suitable for interior applications in new construction and renovation projects.

NOTES:

a) Install in strict compliance with these instructions, and comply with applicable ANSI standards, Tile Council of North America (TCNA) recommendations and building codes.

b) For any procedure not covered by these instructions, contact Noble Company.

STANDARD	ASTM E 96 Procedure E	ANSI A118.10	ANSI A118.12	ASTM C 627	Plumbing Code Listings
Description:	Moisture/Vapor Transmission Rate @ 100°F and 90% humidity	Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installations	Crack Isolation Standard: "System Crack Resistance" (Jig Test)	Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems using the Robinson Type Floor Tester	ICC-ES PMG-1059 IAPMO File #4339
Rating:	0.15 Perms	Passed	High Performance (>1/8")	Extra Heavy	



- A. Ceramic, terrazzo tile or dimension stone
- B. Thin-set appropriate for application
- C. NobleSeal TS Membrane - 0.030" (.75MM)
- D. Sheet bonding agent
- E. Substrate: Concrete, plywood, tile backer board (BB), cured mortar bed, primed gypsum underlayment and radiant heat systems (NobleSeal TS R-value = 0.8)



2. MATERIALS

- 2.1 MEMBRANE:** NobleSeal TS is a thin 0.030" (.75mm) load bearing, bonded, sheet membrane for waterproofing applications.
- 2.1.a COMPOSITION:** NobleSeal TS is a composite sheet made from an alloy of Chlorinated Polyethylene (CPE) with non-woven fabric laminated to both sides.
- 2.2 BOND COAT:** NobleSeal TS should be bonded to substrate with NobleBond EXT or latex modified thin-set mortar. Thin-sets must conform to ANSI A118.4 or the appropriate standards, and TCNA Handbook recommendations. Follow manufacturer's instructions.
NOTE: Job site mortar mixes must conform to ANSI A108.5.
- 2.3 WATERPROOF SEALANT:** Use NobleSealant 150 to seam sheets, seal penetrations (i.e. pipes, wire), drains, and terminal edges. Seal preformed corners to sheet (see Figure 2).
- 2.4 PREFORMED CORNERS:**
- 2.4.a OUTSIDE/DAM CORNERS:** Use to flash curb/dam (see Figure 2).
- 2.4.b INSIDE CORNERS:** Install over LAP style corners to prevent potential leaks (see Figure 3).
- 2.5 TOOLS:** Normal tile setting tools plus scissors or utility knife, rubber hand roller, and linoleum roller (75 - 100 lbs. recommended for floors). Application of NobleSealant 150 requires a commercial grade caulk gun.

3. PLANNING & LAYOUT

- 3.1 MEMBRANE:** Quantity of NobleSeal TS sheet required should include waste, upturns and seams. Use preformed corners as necessary.
NOTE: Waterproofing requires a 2" overlap of sheet membrane (refer to section 5.2).
- 3.1.a SHEET DIMENSION:** 5' x 100' = 500 sq. ft. (1.5 m x 30.5 m = 46 m²). Nominal thickness 0.030" (0.75mm).
- 3.2 SHEET BONDING AGENT:**
- 3.2.a NobleBond EXT:** Porosity and condition of the substrate can affect coverage, but NobleBond EXT will generally provide the following coverage: 90 to 110 sq. ft./gallon.
NOTE: NobleBond EXT allows for more movement than cement based mortar. It also allows tile to be installed immediately after sheet placement as it does not require further curing. Refer to installation instructions on label.
- 3.2.b Latex Modified Thin-Set:** See manufacturer's coverage rate for 1/8" to 1/4" v-notched trowel.
- 3.2.b.1 Cold Weather Procedure:** Consult bond agent manufacturer for safe low-temperature limits and cure times. Noble Company sheet products remain flexible to -25°F.
- 3.2.b.2 Hot Weather Procedure:** Consult bond agent manufacturer for safe high-temperature limits and mixing procedures for these specific conditions. Control high temperature by shading, misting substrate with water, working at night or any combination of these techniques.
- 3.3 NOBLESEALANT 150:** A 10.3 oz. tube of NobleSealant 150 seams approximately 40 linear feet.
- 3.4 LAYOUT:** Install sheet so that seams overlap in the direction of the slope (shingled fashion). Use chalk lines to maintain sheet alignment. Sheet may be pre-folded and cut to accommodate upturns and other requirements per industry guidelines and specifications.

4. PREPARATION

- 4.1 INSPECTION:** Substrate must meet requirements set forth by the TCNA and ANSI standards. Report in writing any deficiencies that might affect performance of the system.
NOTES:
- a) *NobleSeal TS will not compensate for structural deficiencies in the substrate.*
- b) *Review all detail drawings (see section 10 - Figures/Drawings).*
- 4.2 PROCEDURE:** To incorporate NobleSeal TS into a thin-bed installation, prepare substrate and select appropriate bonding agent.
- 4.3 DRAINAGE :** Wet areas must have proper slope. **CAUTION:** Drains must have a suitable membrane clamping collar. If a standard, 3-piece clamping ring drain is being used, install a NobleFlex® Drain Flashing prior to installing NobleSeal TS. Follow NobleFlex Drain Flashing installation instructions. If a FreeStyle Linear Drain™ is being used, refer to FreeStyle installation instructions.
- 4.4 SUBSTRATES:** Slabs must be flat and should be tested for moisture content and pH. Floor preparations (e.g. patching, leveling) should be done prior to installation of NobleSeal TS.
- 4.5 INSTALLER:** Must be familiar with Noble Company's current written instructions, TCNA Handbook recommendations and ANSI A108 standards.

5. INSTALLATION PROCEDURES

5.1 5.1 BONDED APPLICATIONS (SEE SECTION 6 FOR LOOSE LAID & OTHER APPLICATIONS):

5.1.a Clean and prepare substrate as if thin setting tile without sheet. Bond sheet with either of the following:

1) NobleBond EXT: Refer to NobleBond EXT Installation Instructions.

2) Latex Modified Thin-Set: Spread thin-set with appropriate trowel to achieve full contact (e.g. 1/8" to 1/4" "V"-notch). Trowel an area as wide as the sheet and as deep as can be comfortably reached. In order to avoid trapping air under the sheet, trowel mortar in parallel rows across the width or length of the sheet.

NOTES:

a) *Variation in trowel size, angle at which trowel is held, mixing ratio or any combination thereof may be necessary to achieve maximum contact. Fine notched trowels increase "skinning" rate.*

b) All ridges of bond coat must be parallel to allow air under sheet to escape when embedding.

5.1.b LAY SHEET: Unroll sheet into bonding agent before it begins to form "skin."

5.1.c EMBED SHEET: Embed NobleSeal TS into bond coat (flatten all trowel ridges). For large horizontal areas, use 75 - 100 lb. roller. Work from center of sheet to edges. Pull roller edge-to-edge in overlapping passes. Start at end of first sheet installed, progressing to area installed last. Use rubber hand roller or flat side of trowel with heavy pressure for vertical or small areas.

5.1.d COVERAGE: Complete coverage of substrate and full penetration of bond coat into the fabric is required. Prior to curing, lift sheet and inspect for full contact. If rows or ridges of bonding agent are seen, membrane has not been properly embedded and additional rolling or bonding agent is necessary. 100% coverage is desired.

NOTE: To prevent outer edges from lifting or curling, use weight (i.e., tile, mortar, etc.).

5.2 SEAMING AND JOINING (for waterproof installations): When more than one sheet is needed, use NobleSealant 150 or NobleWeld 100 to seam sheets together. NobleSealant 150 is applied with a commercial grade caulk gun. Seam areas must be clean and free of bond breakers (mortar, adhesives, etc.).

5.2.a NobleSealant 150 (preferred method) - Seams all Noble membranes with or without fabric.

5.2.a.1 Overlap sheets 2" minimum.

5.2.a.2 Apply one 3/16" bead 3/4" from edge of sheet being overlapped.

5.2.a.3 Overlap sheets and flatten with roller or by pressing with flat edge of trowel or hand roller.

NOTE: Beads must be continuous without skips or voids. Seam may be water tested after curing. See sealant label for instructions.

5.2.b NobleWeld 100 - Seaming requires bare membrane to bare membrane.

See *END SEAMS Below.

NOTE: Do not leave NobleWeld 100 open while fabricating seams as the solvent quickly dissipates. Apply from can with dobber or 1" to 2" natural bristle brush, and spread.

5.2.b.1 Allow 2" for lap seam.

5.2.b.2 Only work 2' to 3' of seam at a time.

5.2.b.3 Clean by lightly applying Xylene or alcohol. Immediately wipe with clean, lint-free cloth.

5.2.b.4 Roughen both surfaces to be bonded with copper scrub pad or clean wire brush.

5.2.b.5 Apply NobleWeld 100 liberally and evenly to both surfaces approximately 1" wider than finished seam.

DO NOT ALLOW SOLVENT TO DRY. Material should be soft, wet and tacky. Should solvents dry before completing seam, re-apply.

5.2.b.6 Close seam while CPE is soft and still wet with solvent.

5.2.b.7 Use roller, putty knife or rub seam with cloth to remove excess solvent and eliminate air bubbles.

Overlap sheets and flatten with hand roller or by pressing with flat edge of trowel.

NOTE: The application of heat improves the efficiency of seaming at low temperatures. A hot air gun is recommended to cure seam below 7°C (45°F). Do not heat with an open flame.

5.2.b.8 To insure continuous seam, peel seam back several inches into just completed section before starting next section.

5.2.b.9 Seams must be allowed to cure to develop strength. Do not stress until allowed to cure for 24 hours at 21°C (70°F) and 40% relative humidity. Cure times may be reduced by heating with a heat gun.

***END SEAMS:** Use NobleSealant 150 see above. If using NobleWeld 100 (see 5.2.b) and follow these instructions.

NobleSeal TS fabric must be removed to make a chemically fused seam (see step 6 for options). Mark 2" wide seam area on top of bottom sheet and 2" on bottom of overlapping top sheet. Soak area to be seamed with Xylene approximately 1" wider than the seam marks. Keep wet for at least one minute. Fabric is ready to peel if it will slide on the CPE when scuffed near the edge with fingernail or margin trowel. If solvent dries or fabric does not de-laminate easily, re-apply Xylene. Peel fabric back to mark. Cut fabric at the mark with scissors (as if slitting open an envelope). While CPE is still soft and wet, stray fabric pieces (or fibers) may be re-bonded to the CPE with heavy pressure on the hand roller.

5.3 FLASHINGS, UPTURNS AND CORNERS

5.3.a Turn sheet up vertical surface 1" to 2" higher than flood plane. Plumbing codes require shower waterproofing membrane be flashed 3" higher than the finished dam, when installed behind backer board.

NOTE: Plumbing codes require shower waterproofing membrane be flashed 3" higher than the finished dam or flood plane, when installed behind backer board. If membrane is installed on the front of backer board it should extend to ceiling.

5.3.b CORNERS - See Figures 2 and 3.

5.3.b.1 Lap corners. Bond overlap and seal inside corner with NobleSealant 150.

5.3.b.2 Bond Preformed Corners to sheet and/or substrate with NobleSealant 150. Outside Corners should be installed prior to sheet membrane. (See figure 2)

5.4 DRAINS: Standard shower drains must have a clamping ring to secure membrane to drain body. Inspect floor to insure that proper slope has been provided to eliminate ponding of water on top of membrane. If waterproofing FreeStyle Linear Drain™, refer to installation instructions for FreeStyle drain.

5.4.a If waterproofing a standard 3-part clamping ring drain, a NobleFlex Drain Flashing should have been installed.

5.4.b Cut NobleSeal TS so that it overlaps the NobleFlex Drain Flashing by 2".

5.4.c Apply a 3/16" bead of NobleSealant 150 3/4" from the edge of the overlap.

5.4.d Seal NobleSeal TS to the flashing by compressing NobleSeal TS over the flashing.

5.4.e Install sheet, see section 5.

5.4.f Install clamping ring and firmly tighten bolts.

5.4.g Install strainer and adjust to proper height for tile.

5.4.h FLOOD TESTING: Waterproofing installations should be flood tested to insure that they are watertight.

5.5 PROTECTION OF SHEET: After installation, sheet must be kept clean to enable tile adhesive to bond. If not covered by wearing surface, protect the installed sheet from damage and all foot or vehicular traffic (use mortar skim coat, rugs, plywood, etc.).

6. ADDITIONAL APPLICATIONS

6.1 WATERPROOFING/CLEAVAGE MEMBRANE: NobleSeal TS can be loose laid as a waterproofing/cleavage membrane under a full mortar bed installation (see TCNA guidelines).

6.2 ISOLATING CRACKS AND CONTROL JOINTS: (See Figure 5) Refer to current NobleSeal CIS® Installation Instructions. For applications that do not require waterproofing, use NobleSeal CIS, or modify NobleSeal TS as follows: remove the 2" seaming area on each edge. Follow NobleSeal CIS Installation Instructions.

6.3 STEAM ROOM: NobleSeal TS is a "Low perm waterproofing membrane" and is a suitable vapor barrier for steam showers.

NOTES:

1) *NobleSeal TS must be bonded with a latex portland cement mortar.*

2) *Walls common to exteriors require special design to prevent condensation in wall cavity. Consult with project architect.*

3) *Temperature: Design and install per TCNA guidelines.*

6.3.a INSTALLATION

6.3.a.1 FLOORS:

FULL MORTAR BED METHOD: Use Chloraloy®. Refer to current written instructions.

THIN BED METHOD: Use NobleSeal TS. See Figure 1.

6.3.a.2 CEILINGS & WALLS: Install per TCNA guidelines which require that the membrane be installed after the backer board. Bond with approved latex modified thin set. Allow adequate time for bonding agent to cure. See manufacturer's instructions for curing & service times. Proper movement joints are mandatory according to EJ171. Follow TCNA guidelines to ensure a proper installation.

7. TILE INSTALLATION

7.1 Set tile in accordance with TCNA Handbook recommendations, ANSI A108 standards and bond coat manufacturer's directions. Complete coverage of NobleSeal TS by the bond coat is required.

NOTES:

a) *Refer to bond coat manufacturer's instructions for cure time and suitability. Allow additional time (approximately 50%) when installed over NobleSeal TS.*

b) *Rapid-curing type of thin-set mortar may be used with approval of mortar manufacturer.*

c) *For vinyl flooring applications, see Technical Bulletin #003.*

d) *For any procedure not covered by these instructions, contact Noble Company.*

8. LIMITATIONS

NobleSeal TS is not designed for use as a wearing surface or exposed roof membrane. NobleSeal TS cannot accommodate deflection greater than industry guidelines for the flooring surface. For any application not specifically detailed in the installation instructions, contact Noble Company.

9. WARRANTY

NobleSeal TS brand CPE membrane is guaranteed for the life of the original tile installation by Noble Company against failure caused by rotting, cracking and microorganism deterioration when properly installed in tile systems for which its use is recommended by Noble Company. This warranty is limited to replacement of defective material and freight charges to destination only. There are no other expressed or implied warranties, and this warranty is in lieu of any other warranty, including, but not limited to, implied warranties of merchantability and fitness for purpose. Noble Company is not responsible for consequential damages. The remedy of the purchaser set forth herein is exclusive.

NOTE: NOBLESEAL TS MUST BE INSTALLED IN STRICT COMPLIANCE WITH THESE INSTRUCTIONS, APPLICABLE ANSI STANDARDS, TCNA RECOMMENDATIONS AND ALL APPLICABLE BUILDING CODES.

These suggestions and data are based on information Noble Company believes to be reliable. Users should verify by tests that NobleSeal TS, as well as these installation methods, are suitable with the products being used in their application. Since specific use, materials and handling are not controlled by Noble Company, this warranty is limited to the replacement of defective Noble Company products. Noble Company disclaims any responsibility for (a) warranties of merchantability and fitness for purpose; (b) verbal recommendations of its representatives; and (c) consequential damages.

10. FIGURES/DRAWINGS

Figure 1. SHOWER WITH STEAM SHOWER DETAIL

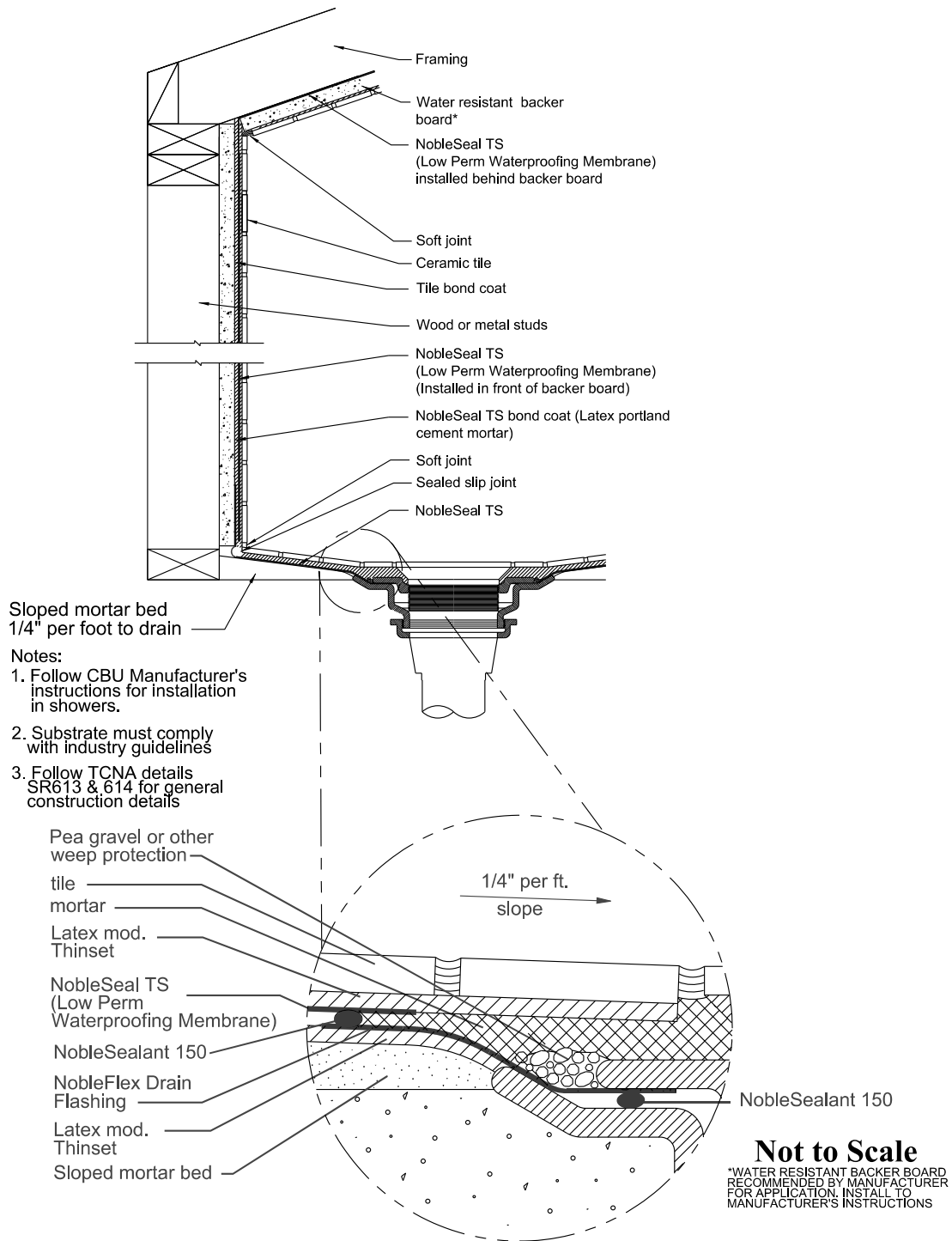


Figure 2. FOLDED, TUCKED, PREFORMED INSIDE & OUTSIDE CORNERS

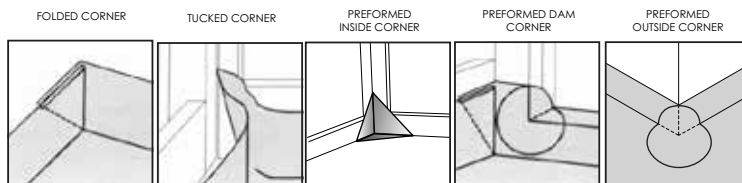
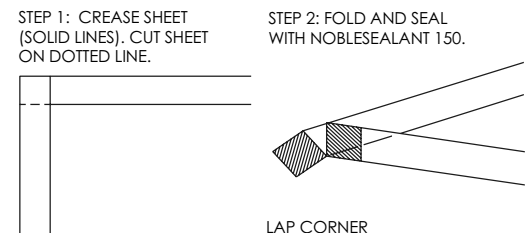


Figure 3. LAP CORNER



10. FIGURES/DRAWINGS (CONT.)

Figure 4. WHEELCHAIR ACCESSIBLE SHOWER AREA - THIN-BED METHOD

Note: One soft joint required, two recommended.

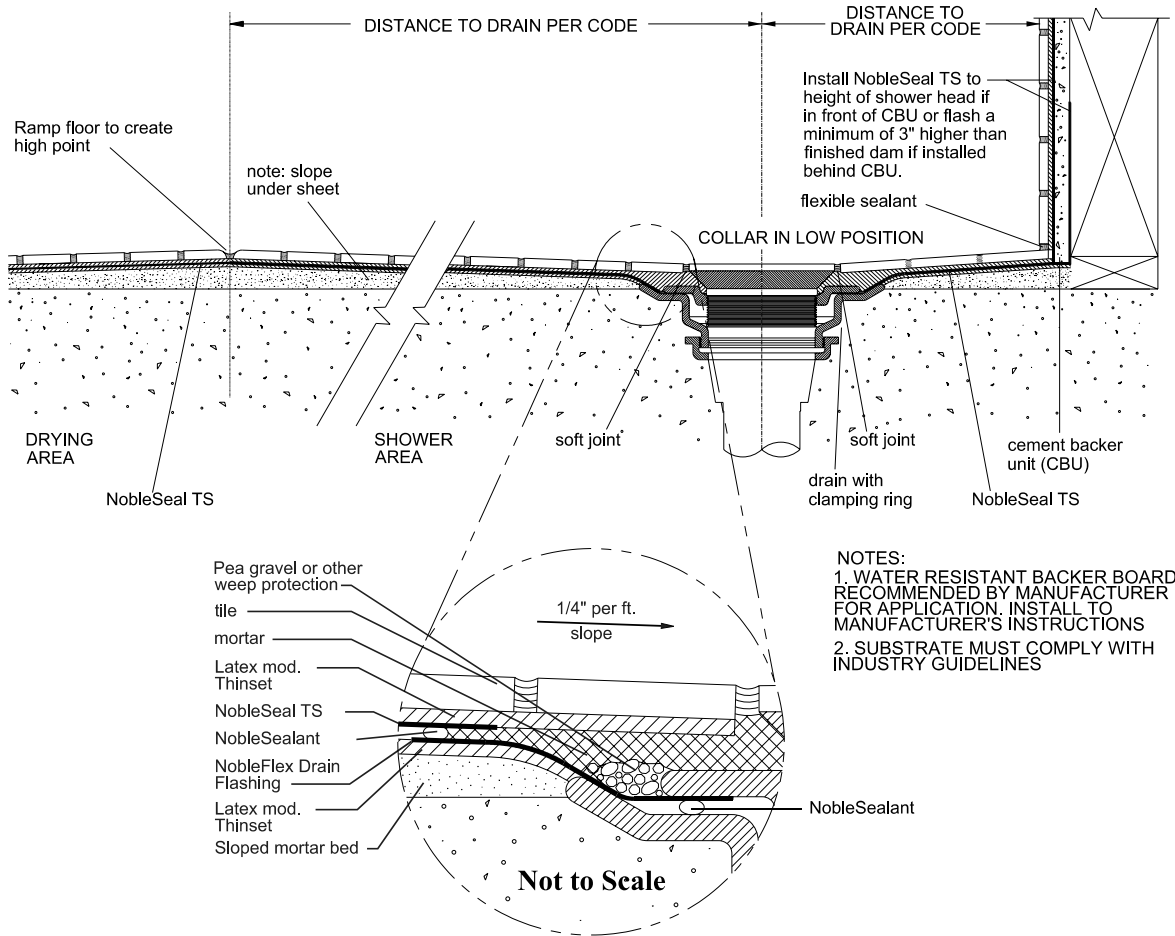


Figure 5. JOINT BRIDGING/CRACK ISOLATION

