

CALIFORNIA DEPARTMENT OF TRANSPORTATION

AUTHORIZATION PROCEDURES CRITERIA FOR GRATED LINE DRAINS

The procedure for inclusion on the list of authorized grated line drains is:

I. Manufacturer submits a submittal package and Authorized Material List Submittal Form, TL-9502 to New.Products@dot.ca.gov. Form TL-9502 is available at: www.dot.ca.gov/aml/

The submittal package must include:

- A. Company's name, address, contact information
- B. Name of the product
- C. Material Safety Data Sheet
- D. Test results from an independent, authorized laboratory. The product must meet or exceed the requirements for the type of material listed.

Line Drain:

1. Monolithic polymer concrete must be consist of aggregate with either polyester resin or vinyl ester resin. The polymer concrete must comply with the requirements shown in the following table:

Quality characteristic	Test method	Requirement
Tensile strength (min, psi)	ASTM C307	1,450
Compressive strength (min, psi)	ASTM C579	11,600
Bending strength (min, psi)	ASTM C580	2,900
Chemical resistance	ASTM C267	Pass
Freeze-thaw, number of cycles without weight loss (min)	ASTM C666	1,600
Wall thickness (min, inch)	--	0.375

2. Fiberglass must be manufactured with glass reinforcement and polyester or vinylester resin and must comply with the requirements shown in the following table:

Quality characteristic	Test method	Requirement
Tensile strength (min, psi)	ASTM D638	7,250
Compressive strength (min, psi)	ASTM D695	11,600
Bending strength (min, psi)	ASTM D790	8,700
Moisture absorption, (max, %)	ASTM D570	0.6
Wall thickness (min, inch)	--	0.125

3. High density polyethylene compounds must be virgin material except that in-plant generated regrind of the same material may be used in quantities not to exceed 20 percent by weight of any batch. The minimum wall thichkness is 0.25 inch. High density polyethylene cell classifications must be PE314400C except the:

1. Density may be classification 3–7 with a maximum density of 0.962
2. Melt index for injection molding must not be greater than 10
3. Carbon black content range must be within 2 percent minimum and 4 percent maximum

4. Expanded polystyrene form for cast-in-place drain channel must be pre-sloped or non-sloped and comply with section 51-1.03C(2). Release agent for the forms must be non-toxic, non-environmentally hazardous, biodegradable, and recommended by the manufacturer.

Frame and Grate:

Grate must be ductile iron. Frame and hardware must be ductile iron or steel.

Frame and grate must comply with AASHTO M306 except the proof load must be 494 psi applied to an area measuring 9 inches by 75 percent of the trench width and placed at the center of the grate in the transverse direction.

Frame and grate must have a pullout resistance of 685 pounds per foot of the length of the grate. Test the pullout resistance by applying a 685 pound tensile load to an area 12 inches longitudinally by 9 inches or the clear span, whichever is less, transversely for 1 minute, then release. Frame and grate must show no signs of cracking or failure.

II. Caltrans will:

- A. Review the submittal for completeness and compliance with the requirements
- B. Notify the manufacturer of missing documents or unsatisfactory test results
- C. Update the authorized materials list as necessary

Authorization is valid for 5 years. To renew, provide a submittal package with current information approximately 6 months before expiration.

Products that don't perform adequately in the field may be removed from the authorized material list at any time.

Updated 11-17-2017