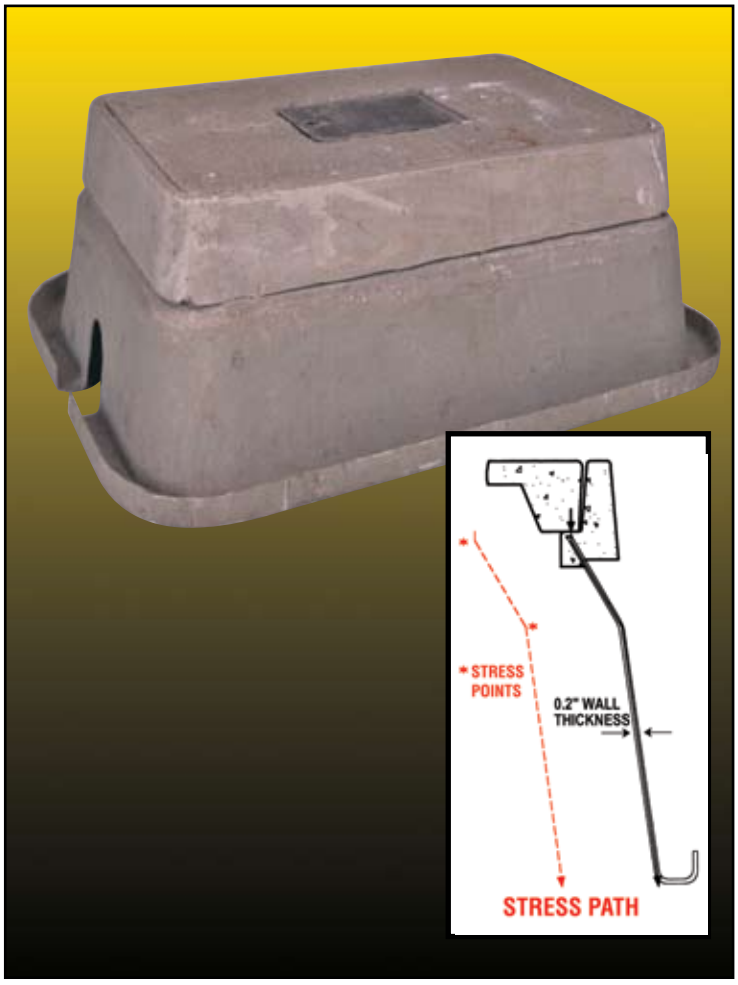
COMPARE

QUAZITE® vs. DISSIMILAR MATERIALS



Since 1971, QUAZITE® precast polymer concrete underground handhole enclosures have provided the best protection available for splices, meters, junction points and other underground utility equipment. QUAZITE® enclosures are UL Listed to the ANSI/SCTE 77 2002 "Specification for Underground Enclosure Integrity" as referenced in the 2005 NEC. End-users can be assured that QUAZITE® enclosures not only meet or exceed ANSI's national standard, but also have been listed by a third party to verify their safety, reliability and performance.

The precision molded monolithic construction of QUAZITE® enclosures ensures consistent quality throughout the part and eliminates the possibility of thermal expansion stress cracks. Enclosures made of dissimilar materials, however, are susceptible to cracking because each material in the enclosure has a unique coefficient of thermal expansion (CTE). When these materials expand and contract at different rates during temperature fluctuations, the resulting stress may lead to cracking and, ultimately, enclosure failure.

The features of both QUAZITE® and enclosures made with dissimilar materials are compared on a point-by-point basis on the back of this page.

COMPARE!	ANSI/SCTE 77* Allowable	QUAZITE® PG 17" x 30" Enclosure	Dissimilar Materials 17" x 30" Enclosure**
CONSTRUCTION PROCESS	Unrestricted	QUAZITE® monolithic polymer concrete enclosures are made by mixing aggregate materials with a polymer resin. The mixture is poured into a matched surface mold lined with interwoven fiberglass cloth. The polymer resin bonds to the aggregate and fiberglass, creating a stronger consistent structure for use in areas of non-deliberate vehicular traffic.	The FRP base is made utilizing a spray-up or hand-lay-up production method using a one-sided open mold. Because the process does not involve matched surface tooling, inconsistencies in sidewall thickness result. In a separate process, the polymer concrete ring is added. The combination of these two process methods may create a less reliable enclosure.
LATERAL SIDEWALL LOAD	**0.625" deflection at 3600 lbs.** This test is critical to ensure that the enclosure will retain its shape and allow the cover to be reinstalled after removal.	**0.54" deflection at 3800 lbs.** **EXCEEDS** test requirements and is able to withstand forces of soil surcharges. Also maintains consistent shape and enclosure integrity.	**0.625" deflection at 1250 lbs.** **Fails** test requirements. Enclosure could fail from the soil surcharges created by approaching nearby vehicular traffic.
COVER TESTING	TIER 5 = 5000 lbs. TIER 8 = 8000 lbs. TIER 15 = 15,000 lbs. With less than 0.5" deflection	**CA style: 0.19" deflection at 8,000 lbs.** **EXCEEDS** TIER 8 requirements **HA style: 0.165" deflection at 15,000 lbs.** **EXCEEDS** TIER 15 test requirements.	**0.54" deflection at 13,867 lbs.** **Fails** Tier 15 test requirements even though the cover tested was rated by its manufacturer for 20,000 lbs.
THERMAL EXPANSION STRESSES	ANSI/SCTE 77 is based on the installed performance of the enclosure and does not specify thermal expansion characteristics.	The monolithic polymer concrete construction expands and contracts at the same rate, ensuring that thermal expansion causes no stress on the structure. Uniform Coefficient of Thermal Expansion (CTE): 20 x 10^{-6} in/in/°F	When materials with different CTEs are bonded, the materials expand and contract at different rates during temperature fluctuations. This expansion / contraction differential causes stress that may result in cracking. CTE for polymer concrete: 20 x 10^{-6} in/in/°F CTE for FRP: 4.4 x 10^{-6} in/in/°F
SAFETY	Provides the minimum performance based test requirements for an underground enclosure to ensure public safety and integrity. Also ensures long installation life with minimal maintenance.	Both the covers *and* boxes for QUAZITE® enclosures are designed to exceed all ANSI/SCTE 77 tests and requirements.	Some manufacturers do not use a safety factor of at least 1.5 as specified by ANSI/SCTE 77 to rate both their covers and boxes.
LOAD TRANSFER	Unrestricted	Engineered to transfer vertical loads uniformly in a straight line to the earth without causing additional stresses to the structure.	Load pressure follows the path of least resistance (i.e. a straight line). With an angled design, then, the transferred load creates stress points at each angle that may cause the enclosure to fail.
DESIGN	Unrestricted	Straight-wall enclosures can be stacked to provide greater depths as required for equipment.	Enclosure construction may cause cracking due to the stress caused by the FRP separating from the polymer concrete.

THE CHOICE! QUAZITE® UNDERGROUND HANDHOLE ENCLOSURES!

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NOTE: Because Hubbell has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.