

MANHOLES AND SUSTAINABLE CONSTRUCTION

Sustainable construction starts with the infrastructure, and there's no better choice underground than precast concrete manholes. Because precast plants reuse formwork to create manhole components that are modular and standardized, construction waste is minimized on the job site. With a limited need to backfill around the components, manholes can be installed quickly, reducing construction times and site disturbance, which results in less noise and fewer emissions from the job site.

The cement used in concrete is made of raw materials extracted from sources such as limestone. Most cement plants rely on nearby limestone quarries. The cement industry has made significant progress in reducing carbon dioxide emissions and energy usage in the last 30 years and is continually striving to make further reductions.

In addition, cementitious materials used in concrete often contain manufacturing byproducts such as fly ash and blast furnace slag that would otherwise end up in a landfill. Plant process water is typically stored, filtered,

and reused during manufacturing. Steel used for concrete reinforcement is typically composed of 95 percent or more post-consumer recycled content. Aggregates used in the manufacturing of precast concrete manholes are generally extracted and manufactured regionally.

Precast concrete manholes are exceedingly strong when they go into the ground, and they get even stronger with time – a significant sustainable attribute. Precast concrete will not rust, rot or burn and has a service life in excess of 100 years.

Precast concrete manholes should be considered when applying for LEED certification. Some of the credits shown in the accompanying chart may also earn additional points in the Innovation in Design category, such as if a large amount of fly ash is specified to replace 40 percent or more of the cementitious material.



Credit	Description	Credits Available	Comments
SS Credit 5.1	Site Development: Protect or restore habitat	1	Due to precast concrete manholes being plant cast and delivered to the site ready to set so they require very minimal site disturbance to install.
SS Credit 6.1 & 6.2	Stormwater Design: quantity and quality control	2	Most stormwater management plans will require manholes in the design to properly handle the stormwater runoff. Precast concrete manholes are the superior choice.
MR Credits 2.1 & 2.2	Construction Waste Management: divert from disposal (50%=1 pt.; 75%=2 pts.)	2	Precast concrete manholes are plant cast and delivered to the site ready to set and create minimal to zero amounts of onsite waste material.
MR Credits 4.1 & 4.2	Recycled Content: post-consumer plus half pre-consumer (10%=1 pt.; 20%=2 pts.)	2	Precast Concrete Manholes may contain supplementary cementitious materials such as fly ash and blast furnace slag which will add to the project's recycled content goals.
MR Credits 5.1 & 5.2	Regional Materials: processed and manufactured regionally (10%=1 pt.; 20%=2 pts.)	2	The vast majority of materials that go into the construction of precast concrete manholes are within a 500-mile radius of the precast plant.



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precast solutions