Manhole System Comparison: MagnaPlast™, Spray-Lined Concrete, and Precast Concrete

Comparing corrosion resistance, constructability, maintenance exposure, and long-term performance.

Attribute	MagnaPlast™	Unlined Precast Concrete	Spray-Lined concrete
Corrosion protection	Integral HDPE material; no added liner required	Concrete directly exposed to the wastewater environment	Field-applied barrier; product-specific chemistry
Structural role	Engineered HDPE manhole structure	Reinforced precast concrete structure	Concrete host; liner role is system- and design-specific
System interfaces	Monolithic body with sealed penetrations	Multiple sections, joints, and connectors	Barrier continuity required at joints, penetrations, and transitions
Substrate dependency	No coating-to-concrete bond	Concrete condition governs performance	Requires sound, prepared substrate and controlled moisture
Field Installation	Factory-assembled; set, connect, anchor, and backfill	Set heavy sections; seal joints and penetrations	Prepare, repair, spray, cure, inspect, and repair defects
Acceptance testing	Project-specified dimensional, connection, installation, and watertightness checks	Joint, connector, assembly, and watertightness checks	Thickness, adhesion, holiday, and cure verification
Maintenance exposure	No coating or liner renewal cycle	May require patching, sealing, or rehabilitation	Barrier inspection and repair may be required
Design life basis	100-year manufacturer design basis	Exposure- and condition-specific	Product-, substrate-, and application-specific