

# GPK SANDED MANHOLES

## Durability, Reliability, Versatility

“ Most jobs are vacuum tested for seal and video tested for flow. The GPK Sanded Manhole Adapters **perform better in both areas.** The GPK Sanded Manhole Adapters are lubed and put together exactly like each stick of pipe. ”

--Panhandle Concrete Products, Inc. - Post Falls, Idaho

- Tests to 10.8 psi and 22 in. Hg
- Create Optimum Flow Conditions
- Assure Solid, Watertight Seal

GPK has not received a single report of failure.

“ Boots are too flexible and grade control becomes difficult. The pipes move too much to match the invert channel in the manhole, creating problems in the flow line. When **GPK Sanded Manhole Adapters** are set in the manhole base, grade control is set in concrete and will not vary from the specifications. ”

--Panhandle Concrete Products, Inc. - Post Falls, Idaho

“ One contractor estimated that there was a **savings of 20 minutes per manhole** in crew time installing manholes with **GPK Sanded Manhole Adapters** versus manholes with boots. Also, when the pipe was set into the **GPK Sanded Manhole Adapter**, **that was it, the job was totally done.** ”

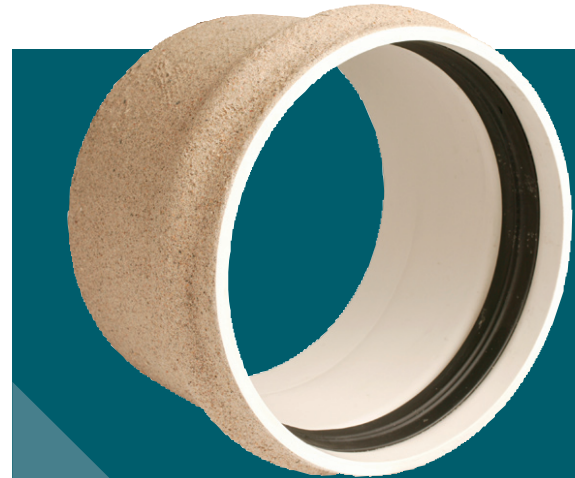
--Panhandle Concrete Products, Inc.  
Post Falls, Idaho



# GPK SANDED MANHOLES

The GPK Sanded Manhole Adapter exceeds 10.8 psi and withstands a vacuum of 22 in. Hg for zero infiltration of groundwater. This design also allows for compression and low insertion pressures during installation.

The smooth inner wall of the PVC sleeve provides optimum flow conditions, and the exterior's abrasive silica layer allows grout to bond the adapter to the concrete manhole.



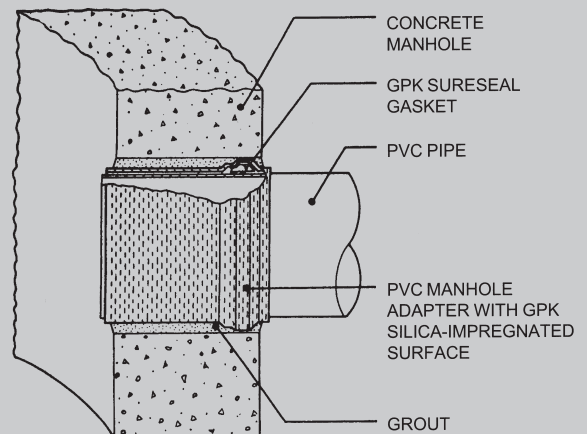
“ Each contractor I work with expresses **great satisfaction** and preference for GPK Sanded Manhole Adapters versus boots. They believe that a manhole base constructed with GPK Sanded Manhole Adapters is a higher quality product and faster to install. ”

--Panhandle Concrete Products, Inc.  
Post Falls, Idaho

## Uncompromising Strength

North Dakota State University, located in Fargo, ND is renowned for its elite research institutions in many fields. When NDSU scientists and research graduates conducted testing of the GPK PVC Manhole Adapter, they found that the system bonded so strongly that over 3 tons psi was required to break the adapter.

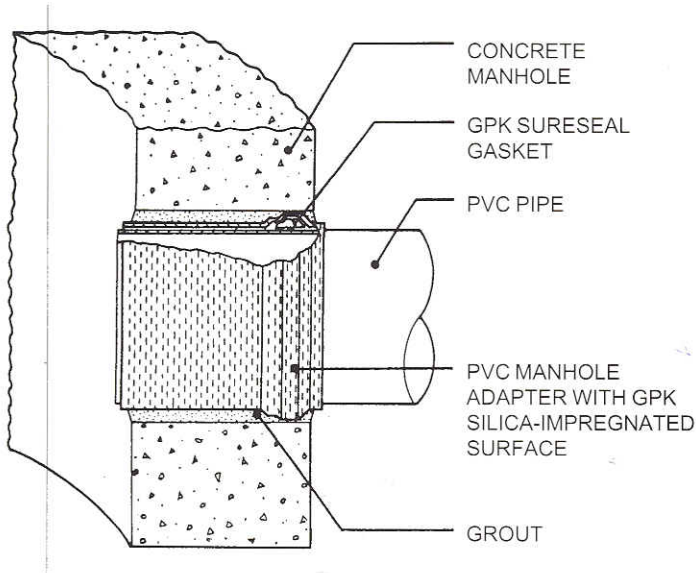
Overall, NDSU research professionals found that GPK Manhole Adapters, installed using the proper conventional methods, are superior overall because of their ease of installation, strength, flexibility and lifetime guarantee.



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# Adapting PVC to Concrete Has Never Been More Advanced

## Durability, Reliability and Versatility



A GPK-designed, heavy duty rubber gasket is fit into each manhole adapter. The gasket joint eliminates many pipeline junction problems, virtually guaranteeing a fitting that is leak proof. It exceeds 10.8 p.s.i. pressure testing and withstands a vacuum of 22 in. Hg for zero infiltration of ground water. This design also allows for compression and low insertion pressures during installation. GPK gaskets also maintain enough flexibility to adjust for pipe deflection long after the installation process has been completed.

The smooth inner wall of the PVC sleeve provides optimum flow conditions. The exterior has an abrasive silica layer that allows grout to bond the adapter into the concrete manhole, assuring a solid, watertight seal.

### GPK Manhole Adapters Tested for "Shear" Strength

In the Mechanical Engineering Laboratory at North Dakota State University, the GPK PVC Manhole Adapter was tested for "shear" strength.

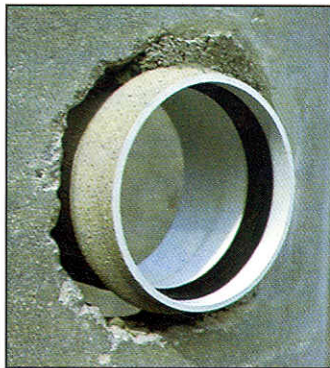
A variety of bonding materials were used to grout the adapter into the manhole. The Tinius-Olsen Force Tester was used to provide the test data (see Table 1). Tests recorded an average force over 3 tons p.s.i. was required to break the bond of the GPK Manhole Adapter. Note that it would be next to impossible to duplicate this force in a normal field application.

GPK PVC Manhole adapters, installed using the proper conventional methods, are superior to anything else on the market for strength and flexibility.

TABLE 1

Grout Used	Curing Time	Force (in pounds) required to break adapter out of manhole.
Quikrete	37 Days	10,300
Quikrete	4 Days	4,600
Quikrete	4 Days	4,880

NOTE: Table 1 Shows Results of Three Tests Done at an Independent Laboratory Using Quikrete Mortar Mix that is Made to Meet ASTM Designation 387 for Type N Mortar.



After an opening has been made in the wall of the concrete manhole, position the GPK Adapter in the center of the opening.



Apply a non-shrinking grout or concrete mixture in between the adapter and manhole.



Allow the bonding material to cure properly to assure a watertight seal.