

# Technical Note

## TN 5.15 Integral Bell Transition for HP Pipe Products

ADS offers a variety of joints to the marketplace. HP pipe products are manufactured using polypropylene resin and is available in 12" - 60" (300 - 1500 mm) with exterior corrugations (dual wall), while 30" - 60" (750 - 1500 mm) may also be available with an exterior shell (triple wall). The HP products are also available for storm and sanitary sewer markets. Additional information regarding each of the products available from ADS can be found in Technical Note 1.05: *Pipe Joints and Gaskets*. While HP pipe can be cut in the field, the connection method must be based on the allowable joint performance for the project.

ADS HP pipe products have an integral bell which maintains a constant pipe outside diameter (OD). This constant OD eliminates the need for bell holes and makes it easier to maintain line and grade during installation. The bell and spigot design for HP products, with an elastomeric rubber gasket meeting ASTM F477, meets or exceeds the watertight testing requirements outlined in ASTM D 3212.

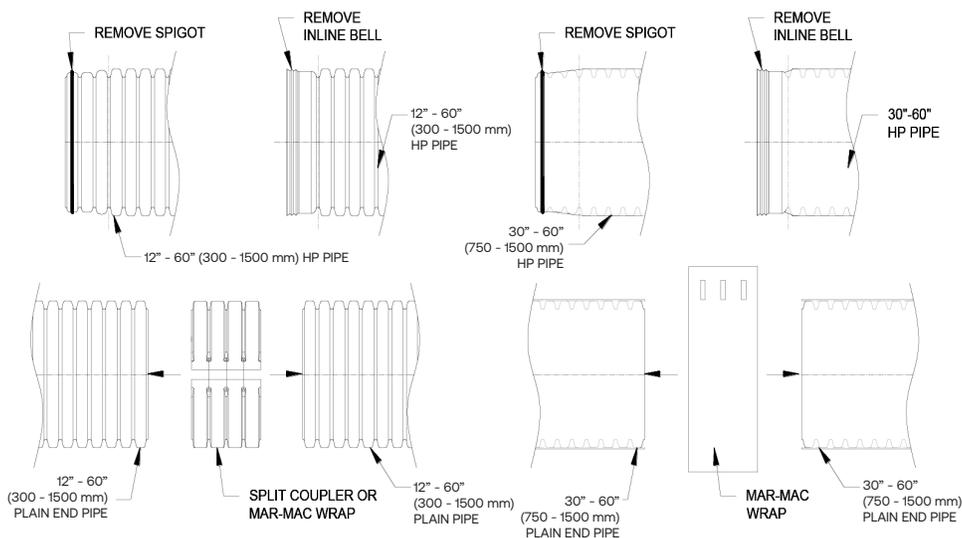
### Connections for HP Pipe

With the variety of couplers available, connecting to an existing pipe run or a fabricated fitting may necessitate a transition to other ADS joints. ADS fittings come standard with a plain end, welded bell end or IB bell or spigot end; the end treatment will be based on fitting diameter and available configurations are available in the ADS Fittings Manual. Standard large diameter or custom fittings utilizing IB joints require no additional field work for the connection.

#### Integral Bell Pipe to Plain End Pipe (12" - 60" [300 - 1500 mm]) (Plain End Pipe/Fitting Connections) *Storm Drainage Only as specifications permit*

Remove the bell or spigot end of the pipe. The spigot end on 12"- 60" (300 - 1500 mm) pipe will have mini or reduced-size corrugations. To achieve a **soil-tight** joint, a split band coupler may be utilized to connect 12" - 60" (300 - 1500 mm) dual wall pipe and a Mar-Mac® coupler may be utilized to connect 12" - 60" (300 - 1500 mm) dual or triple wall (where applicable) pipe. Refer to Figure 1 for common configurations.

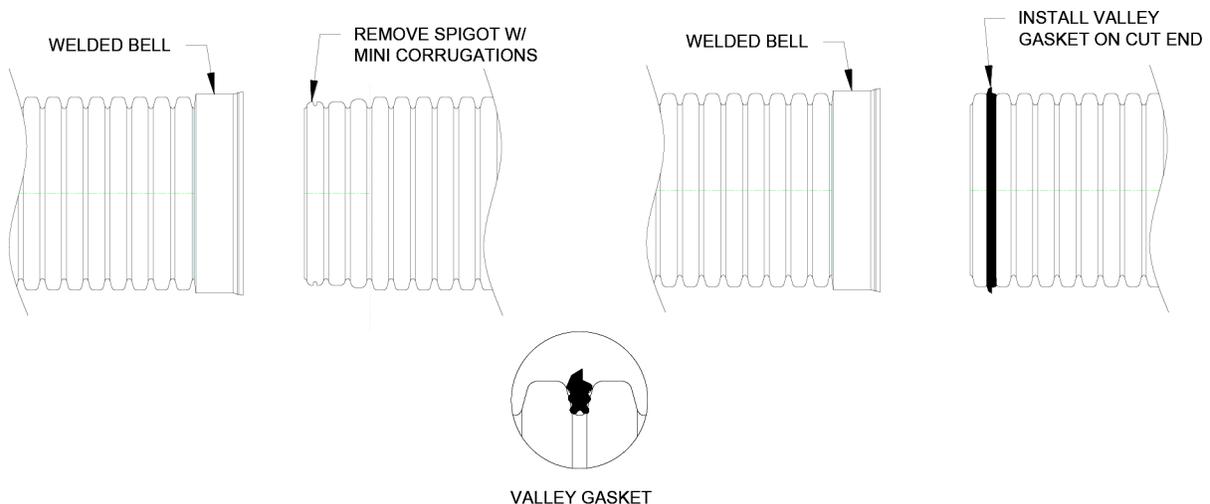
Figure 1: HP Integral Bell Pipe to Plain End Pipe Connection



## Integral Bell Pipe to a Welded Bell (12" – 24" [300 - 600 mm]) (Welded Bell End Pipe/Fitting Connections)

To connect dual wall pipe or dual wall fittings that already have a welded bell, remove the mini corrugations from the spigot end or the integral bell from the pipe. The welded bell can be identified easily compared to the integral bell, because a weld seam will be present where the bell and corrugations meet. In addition to the weld seam, the OD of the welded bell is slightly larger than the OD of the adjacent corrugations. Refer to the pictures in Figure 2. Once the mini corrugations or integral bell has been removed, install a valley gasket (12"- 24" [300 - 600 mm]) provided by ADS. Valley gaskets are to be placed in the valley behind the first corrugation crown. Lettering printed on the gasket will face the joining bell. Lube gasket and the inside of the welded bell, being sure to lube the bell's leading edge, and insert the spigot into the welded bell. This connection is considered watertight in accordance with ASTM D3212 when using an ADS watertight valley gasket. Consult an ADS representative to ensure the correct gasket is ordered to meet connection performance requirements. For watertight connections for 30" – 60" (750 - 1500 mm) triple wall pipe, please contact an ADS representative for currently available options.

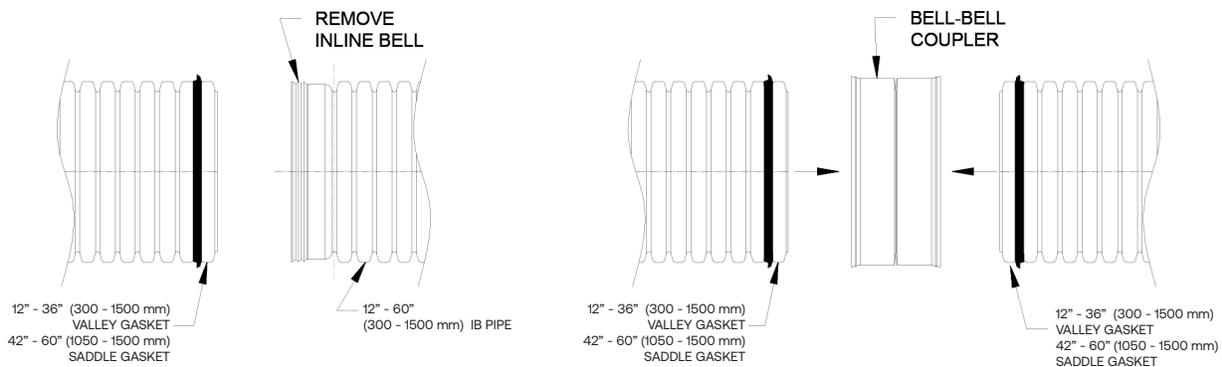
**Figure 2: Welded Bell Connection**



## Integral Bell Pipe to Bell-Bell Coupler Connection (12" - 24" [300 - 600 mm])

Some field modifications for 12"-24" (300 - 600 mm) pipe will require the use of a bell-bell coupler in conjunction with a valley gasket. This field joint configuration follows very similarly to that described above for welded bell pipe/fitting connections. Remove the inline bell, spigot and/or the appropriate number of corrugations needed to make the connection and install a valley gasket (12"- 24" [300 - 600 mm]) provided by ADS. Valley gaskets are to be placed in the valley behind the first corrugation crown. Lettering printed on the gasket will face the joining bell. The joint will now consist of two pipes/fittings which each have a valley gasket installed, as shown in Figure 3. Lubricate the interior leading edge of a bell-bell coupler and the valley gaskets. Connect the pipes by inserting the valley gasket end of the pipes into the bell-bell coupler. This connection is considered watertight in accordance with ASTM D3212, provided an ADS watertight valley gasket used. Consult an ADS representative to ensure the correct bell-bell coupler with accompanying gasket is ordered to meet connection performance requirements. For watertight connections for 30"- 60" (750 - 1500 mm) triple wall pipe, please contact an ADS representative for currently available options.

**Figure 3:** Bell-Bell Coupler Connection



## Vent Tube Sealing

The manufacturing process of corrugated plastic pipe requires the release of hot air from inside the corrugations in order to properly form the corrugations. This hot air is allowed to escape from the corrugations during the extrusion process via vent tubes that run the length of the pipe. Vent tubes become exposed when the pipe is cut in the field to install a fitting, connect to a manhole, or otherwise adjust the length of a pipe run. Exposed vent tubes may result in a leak path, and therefore is recommended that they be sealed. It is important that these vent tubes, when present, be sealed whenever the pipe is cut in the field. Please see Technical Note 5.16: *Methods for Sealing Vent Tubes* for instructions on sealing the vent tube.

