

Sydney Water – Mains Replacement Custom Engineered Pipe Adaptors

The Oaks, NSW

Product	Ductile Iron custom engineered pipe adaptors
Application	Industrial
Local Authority /Government	Sydney Water
Consulting Engineer	West Region Delivery Team (WRDT)



The Problem:

On The Oaks main replacement project, there were a number of sections in this pipeline that required connections to different pipeline materials being Polyethylene (PE) heavy walled pipe and DICL (DI) pipe.

Some of these connections were to existing assets already in the ground. Off the shelf eccentric tapers would have left a variation of ID's of up to 50mm in some cases, creating a step in the invert level of the pipe causing head loss and possible stress points overtime.



The Solution:

WRDT Engineers approached Vinidex, a major pipe and fitting provider, to work together with their engineering team to develop a solution to the common problem.

- In the 1st instance, fabricated steel pieces were considered. It became apparent this was going to be a very expensive option with long lead times and problematic alignment with PE flanged drilling patterns.
- Vinidex proposed an FBE coated DI custom casted and machined Flanged Eccentric taper transition fittings solution that met the requirements of AS2280 and AS4087 for flanged connections.
- Product design drawings were created and submitted to WRDT for comment and then subsequent approval.
- Each Eccentric Transition Taper are manufactured to match the ID of the machined PE stub flanges, providing a seamless transition between PE to DI at each join along the pipeline (and lower headloss or potential for ragging)
- There were significant cost savings also to be had over the alternatives in materials and install.

Interesting Key Points:

- The final design was developed also with partners Derwent Industries one of the few working DI fittings foundries left here in Australia; supporting the local manufacturing industries
- Working with the Supply Chain and their respective engineering and technology teams enables WRDT to leverage specialised experience and wider industry reach for innovative thinking and problem solving.