

Subject TA 0147: ADS N12 Dual-Wall Corrugated HDPE Pipe, Type Approval Recommendation.
Date: 2nd May 2016
Distribution: Phil Ellingworth (Chief Engineer), Liam Palmer-Cannon (Head of Engineering, Track & Structures), Gordon Djurdjevic (Track Engineering Manager), Lambros Lambropoulos (Process Engineering Manager)

1. Purpose

The purpose of this memorandum is to recommend Engineering Product Approval of the ADS N12 Dual-Wall Corrugated HDPE Pipe.

Product Information	
Name	ADS N12 Dual-Wall Corrugated HDPE Pipe
Model/Type	N12 Dual-Wall Corrugated HDPE Pipe
Hardware Revision	N/A
Software Version	N/A
Manufacturer	ADS Water
Application	<ul style="list-style-type: none"> • Gravity and Low-Head water conveyance. • Groundwater/water table removal.

2. Background

ADS N12 Dual-Wall Corrugated HDPE Pipe is a dual wall pipe (outer corrugated wall and smooth inner wall). The pipe is engineered with a compound of high density virgin polyethylene resin to provide high strength material properties. ADS HDPE pipe is used extensively in civil, mining, rail and irrigation applications.


It has been requested that MTM consider the ADS N12 Dual-Wall Corrugated HDPE Pipe for approval for use on the MTM network.

3. Justification

ADS N12 Dual-Wall Corrugated HDPE Pipe has been used on V/Line, TfNSW (Transport for New South Wales), ARTC and QR networks. This product has also been type approved by TfNSW (ESC 420 Track Drainage and TMC 421 Track Drainage) and by ARTC.

ADS N12 Dual-Wall Corrugated HDPE Pipe has the following properties:

- Comes in sizes from 100mm to 1500mm Inside Diameter (ID).
- Can be supplied in Standard and Slotted variants.
- The pipes are manufactured with properties in accordance with AS/NZS 2566.1, Buried Flexible Pipelines – Part 1 Structural Design.

	TYPE APPROVAL RECOMMENDATION	
L4-CHE-FOR-00138	Version: 1	Effective from: 11 th April 2016

Benefits of the pipe include:

- Strength – The HDPE properties of this product (once installed) make it comparable in strength to precast concrete pipes, while weighing far less.
- OH&S – Reduced manual handling risk during installation. ADS Pipe system requires no extra couplers, grout or sealants for installation due to built-in bell and factory-installed gasket, hence fewer components to be installed on site.
- Cost – Lighter weight pipes can translate to installation cost savings.
- Reduced wastage – HDPE not susceptible to bell chipping and cracking or damage during transport and installation.
- Low CO2 emissions – significantly less energy used to manufacture when compared to concrete, PVC and polypropylene pipes.
- Hydraulic efficiency – low Manning’s ‘n’ due to smooth polyethylene interior and provides better flow results.
- Durability – HDPE has a life span of the order of 100 years and is recyclable.
- Chemical – abrasion resistant and suitable for acid sulphate soils and highly abrasive flows.

A mandatory risk assessment of the product was conducted and has been attached.

A Desktop review of all reference materials has been undertaken by relevant discipline SMEs.

4. Outcome

On consideration of the engineering product approval submission for ADS N12 Dual-Wall Corrugated HDPE Pipe, detailed above, it is recommended that a product approval be granted.


It is recommended that this approval be granted in line with the conditions, restrictions, and limitations below.

Conditions Restrictions Limitations	<ul style="list-style-type: none"> • Installation of pipe shall be in accordance with ADS N12 Dual-Wall Corrugated HDPE Pipe Installation Guide, AS/NZS 2566.2 and project specifications. • The design of ADS N12 Dual-Wall Corrugated HDPE Pipe pipes shall comply with AS/NZS 2566.1. • Any variation to the recommended cover will require a waiver and shall be submitted to the Chief Engineer for approval.
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5. Prepared By



Tim Powell
Track Engineer
Metro Trains Melbourne

	TYPE APPROVAL RECOMMENDATION	
L4-CHE-FOR-00138	Version: 1	Effective from: 11 th April 2016

6. Endorsement



Gordon Djurdjevic
Track Engineering Manager
Metro Trains Melbourne



Lambros Lambropoulos 3/5/16
Process Engineering Manager
Metro Trains Melbourne

7. Approval



Liam Palmer-Cannon
Head of Engineering – Track & Structures
Metro Trains Melbourne