



**ApprovalMark**

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To Whom It May Concern

Verification that ApprovalMark International, who are a JAS-ANZ accredited independent 3rd party Certification Assessment Body, witnessed Fusion's functional testing programme to provide fitness for purpose confidence for their swept bend range, from 110mm to 630mm, PE100, SDR 11 & 17, 11.25 to 90 degree angular displacement. The testing programme was based on the primary hydrostatic strength tests outlined in ISO 1167 using the pressures determined within both EN 12201 and AS/NZS 4129 standards – "Fittings for Polyethylene (PE) Pipe for Pressure Applications" (although Fusion used the EN 12201 pressures as they are marginally higher). ISO 1167 is the referenced methodology in both EN 12201 and AS/NZS 4129 standards.

The tests at 80 degrees Celsius (1000 hours) and 20 degrees Celsius (100 hours) are accepted industry wide as being the primary 'fitness for purpose' tests for PE pipes and fittings (stress crack growth resistance and mechanical strength).

Given the nature of the manufacturing process (potential to affect the wall thickness on the outer bend form) it was decided to test only the 90 degree angular displacement fittings in both SDR 11 & 17, as this was deemed to be the worst case scenario and several key sizes in the swept bend range were chosen.

A series of tests have been conducted to show compliance of the final swept bend product with the key hydrostatic testing requirements of the initial pipe used in the manufacturing process. The tests showed that the manufacturing process had not diminished the pressure rating of the initial pipe and therefore the final product should retain the initial pressure rating (PN) of the pipe, specifically: PE100, SDR11 = PN16 & PE100, SDR17 = PN10 and are therefore considered fit for purpose

John PRASAD  
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