

# Specification

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Spec. No.	<b>S211-01</b>
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**Part No:** 0132190                      **Description:** 32/32/32 Y Connector

## 1. Parts Listing

<b>Eden Part No.</b>	<b>Description</b>
0132190	32mm Y Connector
1140103	40/40/40mm Y Body
124001	40mm Split Cap
1140401	40/32mm Port reducer
1140402	40/32mm Split Port Reducer

## 2. Scope

The scope of this specification is to describe the construction and the requirements of the components used in the access network where the Y connector connects the trunk tube to the customer premises. For this purpose, a Y connector is inserted into the protective tube (trunk) which contains a number of guide tubes. In the Y connector one or more of the guide tubes is cut and connected to the branch tube. In this way a dedicated link is obtained to the customer's premises for either blowing or pulling of cables.

## 3. Protective and Branch Tube

The input and output ports of the Y connector shall adequately fit the protective and branch tubes respectively.

Protective tube specifications are:

Outer diameter	32mm
Tolerance	-0.5 + 0.5mm
Material	HDPE

## 4.0 Y Connector

The connector shall consist of two halves which can be easily aligned and assembled together and manually tightened.

The outlet of the branch tube shall be at an angle of 45° with the axis of the connector body.

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The dedicated customer guide tube inside the connector must follow a smooth curve with a minimum bend radius of 25cm.

Both 40mm caps must be of a Splittable type and shall have sufficient strength to guarantee long term performance and repeated assembly. The front of the cap facing the incoming 40mm duct will have a conical contour to reduce the possibility of the connector snagging against obstruction which may exist in location. The 40mm caps shall provide upstands at 90 to the tongue and groove sections to assist manual tightening.

The Y outlet shall have sufficient space for 3 guide tubes of 7mm to be branched and through connected.

The branch tube cap shall be a one piece moulding.

The threads on all caps shall be single start to ease assembly.

The connector shall have the necessary sealing arrangement to protect the inner cavity against significant ingress of mud, sand and debris.

The connector must be able to be assembled and disassembled without the use of tools.

For dimensions see drawings in Appendix A

### **4.1 Material**

The connector body and caps shall be constructed in HDPE/High Impact Polypropylene and the protective and branch tube grab rings in ABS/POM. The following performance tests will demonstrate satisfactory design performance and material selection will ensure good lifetime and stability of performance characteristics.

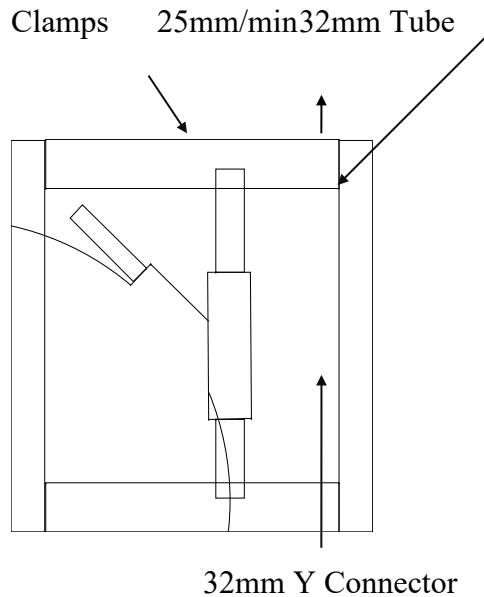
### **4.2 Performance Tests.**

The Y connector shall withstand the following mechanical and environmental tests:

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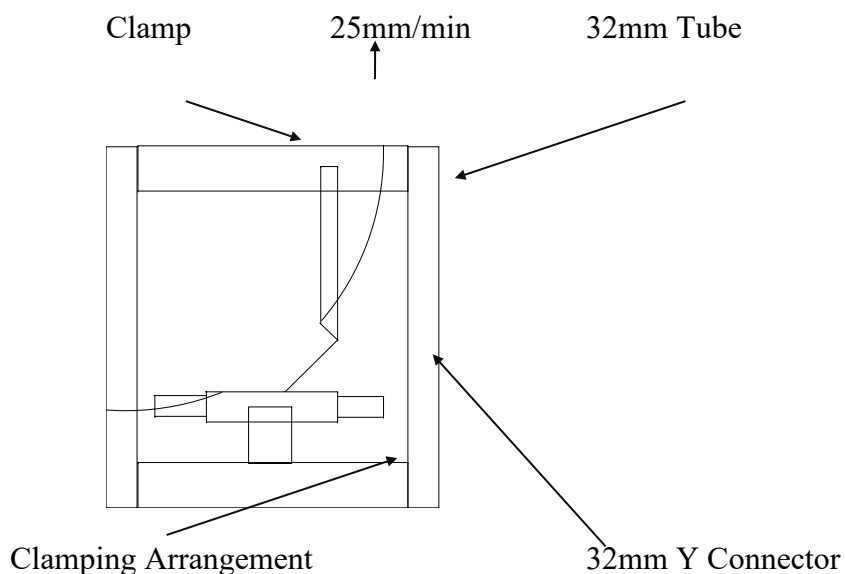
### 4.2.1 Tensile Test.

The purpose of the test is to establish the minimum force necessary to destroy the integrity of the assembly.



Connect two pieces of 32mm duct and a short section of branch tube. Ensure all the connections are tightened. Place the assembly in a tensometer connecting the two 32mm tubes to the opposing jaws and perform a destructive test at a rate of extension of 25mm/minute.

Record the maximum force before failure and note also the failure mode. Minimum acceptable force 1500 Newton's.



Prepare an assembly as above and using a suitable clamping arrangement secure the 32mm protective tube section to one of the tensometer jaws. Place the branch tube in the other jaw and perform a destructive test at a rate of extension of 25mm/minute.

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Record the maximum force before failure and note also the failure mode. Minimum acceptable force 1500 Newton's.

### **4.2.2 Impact Test**

The purpose of this test is to prove the resistance of the Y connector against impact at low temperature.

Connect two pieces of 32mm duct and a short section of branch tube. Ensure all the connections are tightened. Pre-condition the assembly for two hours at a temperature of - 5 +/- 2 C. Place the assembly on the ground and subject it to an impact force using a tup of 1kg and a height of 2.0 metres.

The assembly is deemed to have passed the test if the assembly has no fracture lines. Slight localised indentations are permissible.

### **4.2.3. Pressurisation.**

The purpose of this test is to ensure that the assembly protects against ingress of foreign matter.

Connect two pieces of 40mm duct and a section of branch tube. Ensure all the connections are tightened. The assembly should be submerged in a mixture of mud/sand and rubble and a head of water of 1 metre. Ensure that there is no contamination from the free ends of the protective and branch tube. Pre-condition for 24 hours and then clean off all the external contamination. Open the assembly and record condition.

The assembly is deemed to have passed the test if there is minimal debris present.

### **4.2.4 Design Lifetime**

The connector shall meet all performance requirements, over a minimum period of 20 years. It shall be designed and manufactured such that there is no residual stress which could adversely affect performance over the lifetime of the product.