

# System Group - Futura S.p.A.

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## POZZETTI MANHOLES



Pozzetti PE  
per sistemi di scarico  
interrati  
PE manholes  
for buried sewerage system

*BIM Object Guide:*

Pozzetti d'ispezione in polietilene (PE)  
Manholes in polyethylene (PE)

Version

Version 1 10/Dic/2018 Pag 1 di 10

## BIM Object Guide Sysmtem Group SPA:

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## 1.0 Introduction:

This document guides the use of the BIM System Group Catalog objects:

Polypropylene (PP) double layer pipelines for underground buried non pressure sewer, of nominal internal diameter DN/ID and nominal external diameter DN/OD \_\_\_mm, internally smooth of yellow light colour to allow a better visual inspection or when using cameras, externally corrugated of black colour.

Class of ring stiffness SN16 (equal to 16 KN/m<sup>2</sup>) measured according to EN ISO 9969, produced for continuous coextrusion of both layers in conformity with European standards UNI EN 13476 - 3 for structured PP pipes of type B certified by an accredited certification body.

Produced by company certified under Quality Management according to UNI EN ISO 9001/2008, System of Environmental Management conforming to UNI EN ISO 14001:2004 certificated and marked of conformity product issued by Italian Institute of Plastics (IIP) and Bureau Veritas (BVQI).

The pipes must be composed of welded coupler on the head of the pipe (from ø160 to ø500mm), or composed of inline integrated socket (from ø630 to ø1200mm), or with jointing kit composed of a coupler and elastomeric seals that guarantees tightness made in EPDM conforms to European standard EN 681-1, to be singly positioned on the first groove of corrugation of each pipe head where the coupler would be inserted.

The pipe has to bare on its surface the marking foreseen by UNI EN 13476.

## 1.1 Denominations

The parameters of the BIM objects are named according to the NBS National BIM Library objects standard to identify their type and configuration.

The fields are aggregated using the underscore character ( \_ ) and the information within the individual field is separated using the "minus" hyphens ( - ) characters. Field names are abbreviated to reduce the size and the separations are identified by capital letters to help readability.

The file and object names named as:

File name

Field1Author\_Field2 Manufacturer\_Field3 Category\_Field4 Product Range

Object

Field1 Author\_ Field2 Manufacturer\_Field3 Category\_Field4 Class Product\_Field5 Variations

## 2.0 Parameters

The parameters included in the BIM:

### 2.1 Pset\_Classification

Pozzetti in PE formati da tubi con profilo compatto  
PE manholes formed by pipes with compact profile

DN400 / DN500

|                          | DN400  | DN500   |
|--------------------------|--|---|
| AccessibilityPerformance | n/a  | n/a   |
| AssetType                | Fixed  | Fixed   |
| Description              | <p>Modular polyethylene manhole for sewage applications, made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 1,5 m.</p> <p>The structure of the manhole can sustain a maximum water pressure of 50 kPa. Monolithic. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals. Other inlets can be positioned on the body of the manhole with a maximum diameter OD160 both with elastomeric seals and hand extrudor welding.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> | <p>Modular polyethylene manhole for sewage applications, made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5,0 m.</p> <p>The structure of the manhole can sustain a maximum water pressure of 50 kPa. Each module has special mounting grooves and can be jointed with an hand extrusion welding or using an EPDM elastomeric seal. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> |
| Colour                   | Black  | Black   |

|                        |  |   |
|------------------------|--|---|
|                        |  | <p>Polyethylene rotomoulded base DN 500 for sewage manhole, with up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD250 mm and one outlet for pipes with maximum outside diameter OD250 mm. Polyethylene circular extensions DN 500 height 250/500/1000 mm, provided with structured external reinforcing and anchoring ribs for underground installation.</p> <p>Each module has special mounting grooves and can be jointed both with an hand extrusion welding or with an EPDM elastomeric seal. Other inlets can be positioned on the body of the manhole with a maximum diameter OD160 both with elastomeric seals and hand extrudor welding.</p> |
| Constituents           | <p>Polyethylene rotomoulded base DN 400 for sewage manhole, with up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD200 mm and one outlet for pipes with maximum outside diameter OD200 mm. Monolithic.</p> |   |
| DurationUnit           | years  | years   |
| ExpectedLife           | 50   | 50  |
| Features               | Chemical resistance of the gully according to ISO-TR 10358   | Chemical resistance of the gully according to ISO-TR 10358  |
| Finish                 | n/a  | n/a   |
| Grade                  | n/a  | n/a   |
| Manufacturer           | <a href="mailto:futura@tubi.net">futura@tubi.net</a>   | <a href="mailto:futura@tubi.net">futura@tubi.net</a>  |
| Material               | Polyethylene (PE)  | Polyethylene (PE)   |
| ModelNumber            | <p>Three inlets base H500:PC 0400B0000001; H750:PC 0400B0000002; H1000:PC 0400B0000003; H1250:PC 0400B0000004; H1500:PC 0400B0000005</p>   | <p>Three inlets base H500:PC 0500B0000002; H750:PC 0500B0000009; H1000:PC 0500B0000004; H1250:PC 0500B0000007; H1500:PC 0500B0000008. Extension H250: PC 0500P0000003; Extension H500: PC 0500P0000004; Extension H1000: PC 0500P0000008. Gasket: 218G30000006</p>  |
| ModelReference         | In line polyethylene manhole DN400   | Rotomoulded PE Manhole DN500  |
| Name                   | Polyethylene manhole DN400 for sewage up to OD200  | Polyethylene manhole DN500 for sewage up to OD250   |
| ConnectedStandardPipe  | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP  | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP   |
| PipeOD                 | Single wall HDPE/PP/PVC Pipe: up to OD200; Double wall corrugated pipe: up to OD200.   | Single wall HDPE/PP/PVC Pipe: up to OD250; Double wall corrugated pipe: up to OD250.  |
| AssembledMinimumHeight | 500 mm   | 500 mm  |

|                           |                       |   |
|---------------------------|-----------------------|---|
| AssembledMaximum Height   | 1500 mm               | 5000 mm                                   |
| BaseHeight                | 500 mm                | 500 mm; 750 mm; 1000 mm; 1250 mm; 1500 mm |
| Extension Height          | -                     | 250 mm; 500 mm; 1000 mm                   |
| Cone Height               | -                     | -   |
| NominalLength             | 560 mm                | 625 mm                                    |
| NominalWidth              | -                     | -   |
| TotalWeight               | -                     | -   |
| ReplacementCost           | n/a                   | n/a                                       |
| Shape                     | n/a                   | n/a                                       |
| Size                      | DN400                 | DN500                                     |
| SustainabilityPerformance | 100% recyclable       | 100% recyclable                           |
| WarrantyDescription       | manufacturing defects | manufacturing defects                     |
| WarrantyDurationLabour    | 2                     | 2   |
| WarrantyDurationParts     | 2                     | 2   |
| WarrantyDurationUnit      | year                  | year                                      |
| WarrantyGuarantorLabour   | futura@tubi.net       | futura@tubi.net                           |
| WarrantyGuarantorParts    | futura@tubi.net       | futura@tubi.net                           |
| AssetIdentifier           | n/a                   | n/a                                       |
| Barcode                   | no                    | no  |
| InstallationDate          | n/a                   | n/a                                       |
| SerialNumber              | n/a                   | n/a                                       |
| TagNumber                 | n/a                   | n/a                                       |
| WarrantyStartDate         | Delivery date         | Delivery date                             |

## DN600 / DN800 / DN1000

|                          | DN600 | DN800 | DN1000 |
|--------------------------|-------|-------|--------|
| AccessibilityPerformance | n/a   | n/a   | n/a    |
| AssetType                | Fixed | Fixed | Fisso  |

|              |  |  |  |
|--------------|--|--|--|
| Description  | <p>Modular polyethylene manhole for sewage applications, made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5,0 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. Each module has special mounting grooves and can be jointed with an hand extrusion welding or using an EPDM elastomeric seal. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> | <p>Modular polyethylene manhole for sewage applications, made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5,0 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. Each module has special mounting grooves and can be jointed with an hand extrusion welding or using an EPDM elastomeric seal. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> | <p>Modular polyethylene manhole for sewage applications, made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5,0 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. Each module has special mounting grooves and can be jointed with an hand extrusion welding or using an EPDM elastomeric seal. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> |
| Colour       | Black  | Black  | Black  |
| Constituents | <p>Polyethylene rotomoulded base DN 600 for sewage manhole, with up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD315 mm and one outlet for pipes with maximum outside diameter OD315 mm. Polyethylene circular extensions DN 600 height 250/500/1000 mm, provided with structured external reinforcing and anchoring ribs for underground installation.</p>  | <p>Polyethylene rotomoulded base DN 800 for sewage manhole, with up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD400 mm and one outlet for pipes with maximum outside diameter OD500 mm. Polyethylene circular extensions DN 800 height 250/500/1000 mm, provided with structured external reinforcing and anchoring ribs for underground installation.</p>  | <p>Polyethylene rotomoulded base DN1000 for sewage manhole, with single inlet with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD800 mm and outlet for pipes with maximum outside diameter OD800 mm; or up to three inlet with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD500 mm and one outlet for pipes with maximum</p>  |



|   |  |   |
|---|--|---|
| <p>Each module has special mounting grooves and can be jointed both with an hand extrusion welding or with an EPDM elastomeric seal. Other inlets can be positioned on the body of the manhole with a maximum diameter OD160 both with elastomeric seals and hand extrudor welding.</p> | <p>The extension can be equipped with aluminum steps with a square profile completely covered with polyethylene during the molding phase, placed inside the manhole at a distance of 250 mm, with non-slip elements. Other inlets can be positioned on the body of the manhole with a maximum diameter OD160 both with elastomeric seals and hand extrudor welding. Polyethylene concentric cone DN 800 reduced to internal diameter 625 mm (according to DIN4034 T1), with circular section, 800 mm height. The cone can be adjusted in default up to the road surface of 250 mm, provided with structured external reinforcing and anchoring ribs for underground installation. The reduced cone can be equipped with aluminum steps with a square profile completely covered with polyethylene during the molding phase, placed inside the manhole at a distance of 250 mm, with non-slip elements. Each module has special mounting grooves and can be jointed both with an hand extrusion welding or with an EPDM elastomeric seal.</p> | <p>outside diameter OD500 mm; or up to five inlet with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD315 mm and one outlet for pipes with maximum outside diameter OD315 mm. Polyethylene circular extensions DN 1000 height 250/500/1000 mm, provided with structured external reinforcing and anchoring ribs for underground installation. The extension can be equipped with aluminum steps with a square profile completely covered with polyethylene during the molding phase, placed inside the manhole at a distance of 250 mm, with non-slip elements. Other inlets can be positioned on the body of the manhole with a maximum diameter OD160 both with elastomeric seals and hand extrudor welding. Polyethylene concentric cone DN 1000 reduced to internal diameter 625 mm (according to DIN4034 T1), with circular section. The cone can be adjusted in default up to the road surface of 250 mm and it is provided with structured external reinforcing and anchoring ribs for underground installation. The reduced cone can be equipped with aluminum steps with a square profile completely covered with polyethylene during the</p> |
|---|--|---|

|                |   |   |  |
|----------------|---|---|--|
|                |   |   | molding phase, placed inside the manhole at a distance of 250 mm, with non-slip elements.<br>Each module has special mounting grooves and can be jointed both with an hand extrusion welding or with an EPDM elastomeric seal.   |
| DurationUnit   | years   | years   | years  |
| ExpectedLife   | 50  | 50  | 50   |
| Features       | Chemical resistance of the gully according to ISO-TR 10358  | Chemical resistance of the gully according to ISO-TR 10358  | Chemical resistance of the gully according to ISO-TR 10358   |
| Finish         | n/a   | n/a   | n/a  |
| Grade          | n/a   | n/a   | n/a  |
| Manufacturer   | <a href="mailto:futura@tubi.net">futura@tubi.net</a>  | <a href="mailto:futura@tubi.net">futura@tubi.net</a>  | <a href="mailto:futura@tubi.net">futura@tubi.net</a>   |
| Material       | Polyethylene (PE)   | Polyethylene (PE).<br>Aluminum  | Polyethylene (PE).<br>Aluminum   |
| ModelNumber    | In line base H500: PC 0600B0000025. Three inlets base H750:PC 0600B0000008; H1000:PC 0600B0000003; H1500:PC 0600B0000005. Spherical base: PC 0600B1000003. Extension H250: PC 0600P0000002; Extension H500: PC 0600P0000003; Extension H1000: PC 0600P0000001. Gasket: 218G30000001 | In line base : PC 0800B0000013. Three inlets base: PC 0800B0000008. Three inlet reduced base: PC 0800B0000008. Spherical base: PC0800B1000004. Extension H250: PC 0800P0000006; Extension H500: PC 0800P0000004; Extension H1000: PC 0800P0000002. Concentric cone reduced H450: PC 0800C0000009; Concentric cone reduced H800: PC 0800C0000006. Gasket: 218G30000002 | In line base for small diameter connections: PC01000B0000088. In line base for big diameter connections: PC01000B0000089. Three inlets base: PC1000B0000066. Five inlets base: PC1000B0000076. Spherical base: PC1000B1000016. Base DN1200 reduced to DN1000: PC1000B0000018. Extension H250: PC 1000P0000014; Extension H500: PC 1000P0000017; Extension H1000: PC 1000P0000011. Cone H650: PC 1000C0000016; Cone H900: PC 1000C0000020. Gasket: 218G30000003 |
| ModelReference | Rotomoulded PE manhole DN600  | Rotomoulded PE manhole DN800  | Pozzetto stampato in PE DN1000   |
| Name           | Polyethylene manhole DN600 for sewage up to   | Polyethylene manhole DN800 for sewage, inlets   | Pozzetto in PE DN1000 per tubi fino a DE800  |

|                           | OD400  | up to OD400, outlet up to OD500  |  |
|---------------------------|--|--|--|
| ConnectedStandardPipe     | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP                      | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP                      | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP                      |
| PipeOD                    | Single wall HDPE/PP/PVC Pipe: up to OD315; Double wall corrugated pipe: up to OD400. | Single wall HDPE/PP/PVC Pipe: up to OD400; Double wall corrugated pipe: up to OD400. | Single wall HDPE/PP/PVC Pipe: up to OD630; Double wall corrugated pipe: up to OD800. |
| AssembledMinimumHeight    | 500 mm   | 1300 mm  | 1200mm   |
| AssembledMaximumHeight    | 5000 mm  | 4800 mm  | 5000mm   |
| BaseHeight                | 500 mm; 600 mm; 750 mm; 1000 mm; 1500 mm   | 450 mm; 500 mm; 800 mm; 1000 mm; 1400 mm   | 500mm; 550mm; 600mm; 650; 800; 1300mm  |
| Extension Height          | 250 mm; 500 mm; 1000 mm  | 250 mm; 500 mm; 1000 mm  | 250 mm; 500 mm; 1000 mm  |
| Cone Height               | -  | 450 mm; 800 mm   | 650mm; 900mm   |
| NominalLength             | 800 mm; 1150 mm  | 820mm; 1020mm; 1090mm  | 1020mm; 1080mm; 1260mm; 1280mm; 1590mm; 1200mm                                       |
| NominalWidth              | -  | -  | -  |
| TotalWeight               | -  | -  | -  |
| ReplacementCost           | n/a  | n/a  | n/a  |
| Shape                     | n/a  | n/a  | n/a  |
| Size                      | DN600  | DN800  | DN1000   |
| SustainabilityPerformance | 100% recyclable  | 100% recyclable  | 100% recyclable  |
| WarrantyDescription       | manufacturing defects  | manufacturing defects  | manufacturing defects  |
| WarrantyDurationLabour    | 2  | 2  | 2  |
| WarrantyDurationParts     | 2  | 2  | 2  |
| WarrantyDurationUnit      | year   | year   | year   |
| WarrantyGuarantorLabour   | futura@tubi.net  | futura@tubi.net  | futura@tubi.net  |
| WarrantyGuarantorParts    | futura@tubi.net  | futura@tubi.net  | futura@tubi.net  |
| AssetIdentifier           | n/a  | n/a  | n/a  |
| Barcode                   | no   | no   | no   |
| InstallationDate          | n/a  | n/a  | n/a  |
| SerialNumber              | n/a  | n/a  | n/a  |
| TagNumber                 | n/a  | n/a  | n/a  |
| WarrantyStartDate         | Delivery date  | Delivery date  | Delivery date  |

## Pozzetti in PE formati da tubi strutturati tipo corrugato PE manholes formed by structured corrugated types of pipes

DN400 / DN500

|                          | DN400   | DN500   |
|--------------------------|---|---|
| AccessibilityPerformance | n/a   | n/a   |
| AssetType                | Fixed   | Fixed   |
| Description              | <p>Modular polyethylene manhole for sewage applications, roto-moulded base made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), extension made with double wall pipe smooth internally and corrugated externally, with ring stiffness tested according to the standard ISO 9969, produced in conformity with EN 13476-3, type B, provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 1,5 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. The base and the extension can be jointed together with an elastomeric gasket or by an hand extrudor welding. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> | <p>Modular polyethylene manhole for sewage applications, roto-moulded base made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), extension made with double wall pipe smooth internally and corrugated externally, with ring stiffness tested according to the standard ISO 9969, produced in conformity with EN 13476-3, type B, provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. The base and the extension can be jointed together with an elastomeric gasket or by an hand extrudor welding. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> |
| Colour                   | Black   | Black   |

|                        |   |   |
|------------------------|---|---|
|                        | Polyethylene rotomoulded base DN 400 for sewage manhole, with up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD200 mm and one outlet for pipes with maximum outside diameter OD200 mm. Extension made with HDPE corrugated pipe OD400, double wall conforms with the standard EN 13476-3, connected to the base with an elastomeric gasket or by an hand extrudor welding. Other inlets with a maximum diameter OD200 can be positioned on the extension of the manhole both with elastomeric seals and hand extrudor welding. | Polyethylene rotomoulded base DN 500 for sewage manhole, with up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD250 mm and one outlet for pipes with maximum outside diameter OD250 mm. Extension made with HDPE corrugated pipe OD500, double wall conforms with the standard EN 13476-3, connected to the base with an elastomeric gasket or by an hand extrudor welding. Other inlets with a maximum diameter OD250 can be positioned on the extension of the manhole both with elastomeric seals and hand extrudor welding. |
| Constituents           |   |   |
| DurationUnit           | years   | years   |
| ExpectedLife           | 50  | 50  |
| Features               | Chemical resistance of the gully according to ISO-TR 10358  | Chemical resistance of the gully according to ISO-TR 10358  |
| Finish                 | n/a   | n/a   |
| Grade                  | n/a   | n/a   |
| Manufacturer           | <a href="mailto:futura@tubi.net">futura@tubi.net</a>  | <a href="mailto:futura@tubi.net">futura@tubi.net</a>  |
| Material               | Polyethylene (PE)   | Polyethylene (PE)   |
| ModelNumber            | Three inlets socket base H500:PC 0400B0000009. Gasket: 218G60000007   | Three inlets socket base H800:PC0500B0000010; Gasket: 218G60000008  |
| ModelReference         | Rotomoulded PE manhole DN400 with corrugated pipe extension   | Rotomoulded PE manhole DN500 with corrugated pipe extension   |
| Name                   | Polyethylene socket manhole DN400 for sewage up to OD200  | Polyethylene socket manhole DN500 for sewage up to OD250  |
| ConnectedStandardPipe  | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP   | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP   |
| PipeOD                 | Single wall HDPE/PP/PVC Pipe: up to OD200; Double wall corrugated pipe: up to OD200.  | Single wall HDPE/PP/PVC Pipe: up to OD250; Double wall corrugated pipe: up to OD250.  |
| AssembledMinimumHeight | 500 mm  | 800 mm  |
| AssembledMaximumHeight | 5000 mm   | 5000 mm   |
| BaseHeight             | 500 mm  | 800 mm  |
| Useful BaseHeight      | 330 mm  | 620 mm  |
| Extension Type         | Corrugated pipe Magnum OD400  | Corrugated pipe Magnum OD500  |
| Cone Height            | -   | -   |
| Useful Cone Height     | -   | -   |
| NominalLength          | 560 mm  | 625 mm  |

|                           |                       |                       |
|---------------------------|-----------------------|-----------------------|
| NominalWidth              | -                     | -                     |
| TotalWeigh                | -                     | -                     |
| ReplacementCost           | n/a                   | n/a                   |
| Shape                     | n/a                   | n/a                   |
| Size                      | OD400                 | OD500                 |
| SustainabilityPerformance | 100% recyclable       | 100% recyclable       |
| WarrantyDescription       | manufacturing defects | manufacturing defects |
| WarrantyDurationLabour    | 2                     | 2                     |
| WarrantyDurationParts     | 2                     | 2                     |
| WarrantyDurationUnit      | year                  | year                  |
| WarrantyGuarantorLabour   | futura@tubi.net       | futura@tubi.net       |
| WarrantyGuarantorParts    | futura@tubi.net       | futura@tubi.net       |
| AssetIdentifier           | n/a                   | n/a                   |
| BarCode                   | no                    | no                    |
| InstallationDate          | n/a                   | n/a                   |
| SerialNumber              | n/a                   | n/a                   |
| TagNumber                 | n/a                   | n/a                   |
| WarrantyStartDate         | Delivery date         | Delivery date         |

## DN600 / DN800

|                          | DN600  | DN800  |
|--------------------------|--|--|
| AccessibilityPerformance | n/a  | n/a  |
| AssetType                | Fixed  | Fixed  |
| Description              | <p>Modular polyethylene manhole for sewage applications, roto-moulded base made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), extension made with double wall pipe smooth internally and corrugated externally, with ring stiffness tested according to the standard ISO 9969, produced in conformity with EN 13476-3, type B, provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. The base and the extension can</p> | <p>Modular polyethylene manhole for sewage applications, roto-moulded base made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), extension made with double wall pipe smooth internally and corrugated externally, with ring stiffness tested according to the standard ISO 9969, produced in conformity with EN 13476-3, type B, provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. The base and the extension can</p> |

|              |  |  |
|--------------|--|--|
|              | <p>be jointed together with an elastomeric gasket or by an hand extrudor welding. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p>  | <p>be jointed together with an elastomeric gasket or by an hand extrudor welding. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p>  |
| Colour       | Black  | Black  |
| Constituents | <p>Polyethylene rotomoulded base DN 600 for sewage manhole, with up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD315 mm and one outlet for pipes with maximum outside diameter OD315 mm. Extension made with HDPE corrugated pipe OD630, double wall conforms with the standard EN 13476-3, connected to the base with an elastomeric gasket or by an hand extrudor welding. Other inlets with a maximum diameter OD250 can be positioned on the extension of the manhole both with elastomeric seals and hand extrudor welding.</p> | <p>Polyethylene rotomoulded base DN 800 for sewage manhole, with up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD400 mm and one outlet for pipes with maximum outside diameter OD500 mm. Extension made with HDPE corrugated pipe OD800, double wall conforms with the standard EN 13476-3, connected to the base with an elastomeric gasket or by an hand extrudor welding. Other inlets with a maximum diameter OD250 can be positioned on the extension of the manhole with elastomeric seals or hand extrudor welding. Polyethylene concentric cone DN 800 reduced to internal diameter 625 mm (according to DIN4034 T1), with circular section, 800 mm height. The cone can be adjusted in default up to the road surface of 250 mm and it is provided with structured external reinforcing and anchoring ribs for underground installation. The cone has a socket to connect to the corrugated pipe extension by an elastomeric EPDM seal or an hand extrudor welding.</p> |
| DurationUnit | years  | years  |
| ExpectedLife | 50   | 50   |
| Features     | Chemical resistance of the gully according to ISO-TR 10358   | Chemical resistance of the gully according to ISO-TR 10358   |
| Finish       | n/a  | n/a  |
| Grade        | n/a  | n/a  |
| Manufacturer | <a href="mailto:futura@tubi.net">futura@tubi.net</a>   | <a href="mailto:futura@tubi.net">futura@tubi.net</a>   |
| Material     | Polyethylene (PE)  | Polyethylene (PE)  |

|                            |  |  |
|----------------------------|--|--|
| ModelNumber                | In line socket base H920:<br>PC0600B0000028. Three inlets socket<br>base H1000:PC0600B0000002; Gasket:<br>218G60000009 | In line socket base H=900:<br>PC0800B0000019. Three inlets socket<br>base H=950: PC0800B0000010. Cone<br>H650: PC0800C0000008. Gasket:<br>218G60000010 |
| ModelReference             | Rotomoulded PE manhole DN600 with<br>corrugated pipe extension   | Rotomoulded PE manhole DN800 with<br>corrugated pipe extension   |
| Name                       | Polyethylene socket manhole DN600 for<br>sewage up to OD400  | Polyethylene socket manhole DN800 for<br>sewage inlet up to OD400 and outlet up<br>to OD500  |
| ConnectedStandardPipe      | Single wall HDPE/PP/PVC Pipe; Double<br>wall corrugated pipe PE/PP   | Single wall HDPE/PP/PVC Pipe; Double<br>wall corrugated pipe PE/PP   |
| PipeOD                     | Single wall HDPE/PP/PVC Pipe: up to<br>OD315; Double wall corrugated pipe: up<br>to OD400.                             | Single wall HDPE/PP/PVC Pipe: up to<br>OD400; Double wall corrugated pipe: up<br>to OD400.   |
| AssembledMinimum<br>Height | 920mm; 1000 mm   | 900 mm; 950 mm   |
| AssembledMaximum<br>Height | 5000 mm  | 5000 mm  |
| BaseHeight                 | 920 mm; 1000 mm  | 900 mm, 950 mm   |
| Useful BaseHeight          | 700 mm; 800 mm   | 650mm  |
| Extension Type             | Corrugated pipe Magnum OD630   | Corrugated pipe Magnum OD800   |
| Cone Height                | -  | 450mm  |
| Useful Cone Height         |  | 650mm  |
| NominalLength              | 800 mm; 1150 mm  | 820mm; 1020mm; 1090mm  |
| NominalWidth               | -  | -  |
| TotalWeight                | -  | -  |
| ReplacementCost            | n/a  | n/a  |
| Shape                      | n/a  | n/a  |
| Size                       | OD630  | OD800  |
| SustainabilityPerformance  | 100% recyclable  | 100% recyclable  |
| WarrantyDescription        | manufacturing defects  | manufacturing defects  |
| WarrantyDurationLabour     | 2  | 2  |
| WarrantyDurationParts      | 2  | 2  |
| WarrantyDurationUnit       | year   | year   |
| WarrantyGuarantorLabour    | futura@tubi.net  | futura@tubi.net  |
| WarrantyGuarantorParts     | futura@tubi.net  | futura@tubi.net  |
| AssetIdentifier            | n/a  | n/a  |
| BarCode                    | no   | no   |
| InstallationDate           | n/a  | n/a  |
| SerialNumber               | n/a  | n/a  |



|                   |               |               |
|-------------------|---------------|---------------|
| TagNumber         | n/a           | n/a           |
| WarrantyStartDate | Delivery date | Delivery date |

## DN100 / DN1200

|                          | DN1000  | DN1200  |
|--------------------------|---|---|
| AccessibilityPerformance | n/a   | n/a   |
| AssetType                | Fixed   | Fixed   |
| Description              | <p>Modular polyethylene manhole for sewage applications, roto-moulded base made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), extension made with double wall pipe smooth internally and corrugated externally, with ring stiffness tested according to the standard ISO 9969, produced in conformity with EN 13476-3, type B, provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. The base and the extension can be jointed together with an elastomeric gasket or by an hand extrudor welding. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> | <p>Modular polyethylene manhole for sewage applications, roto-moulded base made with 100% virgin material, with density 0.930 kg/dm<sup>3</sup> (ISO 1183), extension made with double wall pipe smooth internally and corrugated externally, with ring stiffness tested according to the standard ISO 9969, produced in conformity with EN 13476-3, type B, provided by a company certified according to EN ISO 9001/2000.</p> <p>Maximum height of installation 5 m. The structure of the manhole can sustain a maximum water pressure of 50 kPa. The base and the extension can be jointed together with an elastomeric gasket or by an hand extrudor welding. The connections on the bottom of the manhole should be realized during the moulding process or by hand extrudor welding or with elastomeric seals.</p> <p>All the welding procedures are carried out by licensed professionals according with DVS 2212 Part. 2.</p> |
| Colour                   | Black   | Black   |

|              |   |   |
|--------------|---|---|
|              | <p>Polyethylene rotomoulded base DN1000 for sewage manhole, with single inlet with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD800 mm and outlet for pipes with maximum outside diameter OD800 mm; or up to three inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD500 mm and one outlet for pipes with maximum outside diameter OD500 mm; or up to five inlets with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD315 mm and one outlet for pipes with maximum outside diameter OD315 mm. Extension made with HDPE corrugated pipe OD1000, double wall conforms with the standard EN 13476-3, connected to the base with an elastomeric gasket or by an hand extrudor welding. Other inlets with a maximum diameter OD250 can be positioned on the extension of the manhole with elastomeric seals or hand extrudor welding. Polyethylene concentric cone DN 1000 reduced to internal diameter 625 mm (according to DIN4034 T1), with circular section, 450 mm net height. The cone can be adjusted in default up to the road surface of 250 mm and it is provided with structured external reinforcing and anchoring ribs for underground installation. The cone has a socket to connect to the corrugated pipe extension by an elastomeric EPDM seal or an hand extrudor welding.</p> | <p>Polyethylene rotomoulded base DN1200 for sewage manhole, with single inlet with socket or spigot, joined by hand extrudor welding for pipes with maximum outside diameter OD800 mm and outlet for pipes with maximum outside diameter OD800 mm. Extension made with HDPE corrugated pipe OD1200, double wall conforms with the standard EN 13476-3, connected to the base with an elastomeric gasket or by an hand extrudor welding. Other inlets with a maximum diameter OD250 can be positioned on the extension of the manhole with elastomeric seals or hand extrudor welding. Polyethylene eccentric cone DN 1200 reduced to internal diameter 625 mm (according to DIN4034 T1), with circular section, 450 mm net height. The cone can be adjusted in default up to the road surface of 250 mm and it is provided with structured external reinforcing and anchoring ribs for underground installation. The cone has a socket to connect to the corrugated pipe extension by an elastomeric EPDM seal or an hand extrudor welding.</p> |
| Constituents |   |   |
| DurationUnit | years   | years   |
| ExpectedLife | 50  | 50  |
| Features     | Chemical resistance of the gully according to ISO-TR 10358  | Chemical resistance of the gully according to ISO-TR 10358  |
| Finish       | n/a   | n/a   |
| Grade        | n/a   | n/a   |
| Manufacturer | <a href="mailto:futura@tubi.net">futura@tubi.net</a>  | <a href="mailto:futura@tubi.net">futura@tubi.net</a>  |
| Material     | Polyethylene (PE)   | Polyethylene (PE)   |

|                           |  |  |
|---------------------------|--|--|
| ModelNumber               | In line socket base for small diameter connections: H=: PC01000B0000405. In line socket base for big diameter connections: H=: PC01000B0000406. Three inlets socket base H=970: PC1000B0000043. Five inlets socket base H=830: PC1000B0000056. Socket Cone H700: PC 1000C0000009. Gasket: 218G60000011 | In line socket base: H=: PC1200B0000003. Socket Cone H650: PC 1200C0000002. Gasket: 218G60000012 |
| ModelReference            | Rotomoulded PE manhole DN1000 with corrugated pipe extension   | Rotomoulded PE manhole DN1200 with corrugated pipe extension                                     |
| Name                      | Polyethylene socket manhole DN1000 for sewage up to OD800  | Polyethylene socket manhole DN1200 for sewage up to OD800  |
| ConnectedStandardPipe     | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP  | Single wall HDPE/PP/PVC Pipe; Double wall corrugated pipe PE/PP                                  |
| PipeOD                    | Single wall HDPE/PP/PVC Pipe: up to OD630; Double wall corrugated pipe: up to OD800.   | Single wall HDPE/PP/PVC Pipe: up to OD800; Double wall corrugated pipe: up to OD800.             |
| AssembledMinimumHeight    | 830 mm; 970 mm; 1100 mm; 1300 mm   | 1330 mm  |
| AssembledMaximumHeight    | 5000 mm  | 5000 mm  |
| BaseHeight                | 830 mm; 970 mm; 1100 mm; 1300 mm   | 1330 mm  |
| Useful BaseHeight         | 550 mm; 670 mm; 850 mm; 1050 mm  | 1000 mm  |
| Extension Type            | Corrugated pipe Magnum OD1000  | Corrugated pipe Magnum OD1200  |
| Cone Height               | 450mm  | 450mm  |
| Useful Cone Height        | 700 mm   | 650 mm   |
| NominalLength             | 1020mm; 1080mm; 1260mm; 1280mm; 1590mm   | 1200 mm  |
| NominalWidth              | -  | -  |
| TotalWeight               | -  | -  |
| ReplacementCost           | n/a  | n/a  |
| Shape                     | n/a  | n/a  |
| Size                      | OD1000   | OD1200   |
| SustainabilityPerformance | 100% recyclable  | 100% recyclable  |
| WarrantyDescription       | manufacturing defects  | manufacturing defects  |
| WarrantyDurationLabour    | 2  | 2  |
| WarrantyDurationParts     | 2  | 2  |
| WarrantyDurationUnit      | year   | year   |
| WarrantyGuarantorLabour   | futura@tubi.net  | futura@tubi.net  |
| WarrantyGuarantorParts    | futura@tubi.net  | futura@tubi.net  |

|                   |               |               |
|-------------------|---------------|---------------|
| AssetIdentifier   | n/a           | n/a           |
| BarCode           | no            | no            |
| InstallationDate  | n/a           | n/a           |
| SerialNumber      | n/a           | n/a           |
| TagNumber         | n/a           | n/a           |
| WarrantyStartDate | Delivery date | Delivery date |

### 3 - Load the IFC (INDUSTRY FOUNDATION CLASS) -BIM object

IFC is a neutral, open, non-proprietary file format and not controlled by a single or group of software producers. The file format is an object oriented parametric developed by BuildingSMART to facilitate interoperability in the field of architecture, engineering and construction. IFC is the collaboration format commonly used in BIM projects. The specification of the IFC model is open and available. In theory, it should allow the exchange and use of relevant data and information between different BIM software.

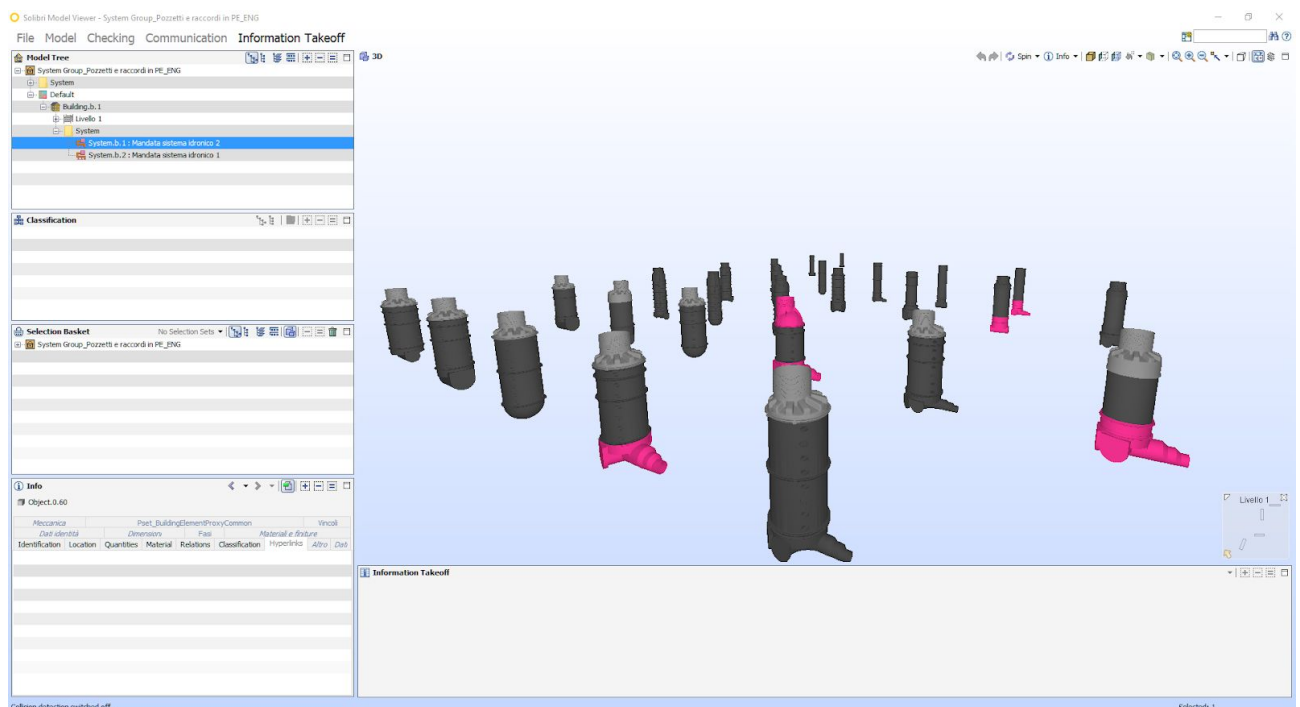
The IFC file is in IFC2x3 format. The new IFC4 scheme is announced soon, but the currently "certified" format is IFC2X3, which is preferred because it allows greater compatibility with the available BIM applications.

In the old versions of Autodesk Revit (example Revit 2013) the export function to the IFC format is done through the use of a specific plugin. IFC is a rapidly developing scheme and new versions of the IFC plugin are often available within the same version of the Revit software. If export is requested in IFC format, we recommend updating the IFC plugin to the latest version.

see <http://apps.exchange.autodesk.com/RVT/en/Home/Index>

Please note that System Group assumes no responsibility for the supply of IFC and RVT files, its accuracy, reliability and accuracy, nor for any damages, losses, lost profits, etc. as a result of its use.

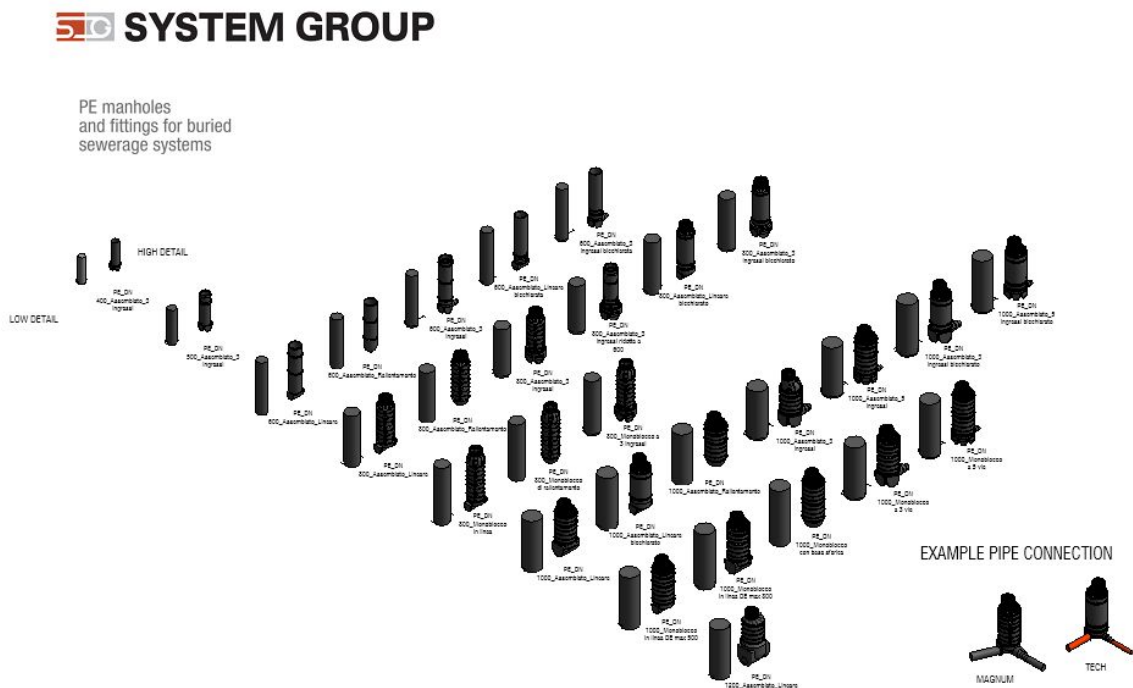
For information on the IFC Industry Foundation Class, visit the buildingSMART site information page at <http://www.buildingsmart-tech.org/specifications/ifc-overview>



## 4 - Load the BIM object in Autodesk Revit

The BIM object "SystemGroup\_Hydro 16" is intended, to be added to the project, as a system <family>. The object is presented in a Revit .rte template file from which it is easy to extract the object in .rfa format.

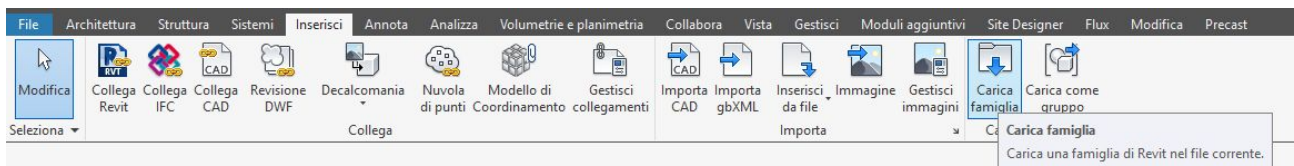
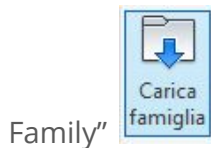
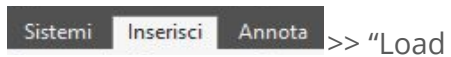
The typical method for adding a BIM object to the project with the extension .rfa (Revit Family) is as follows:



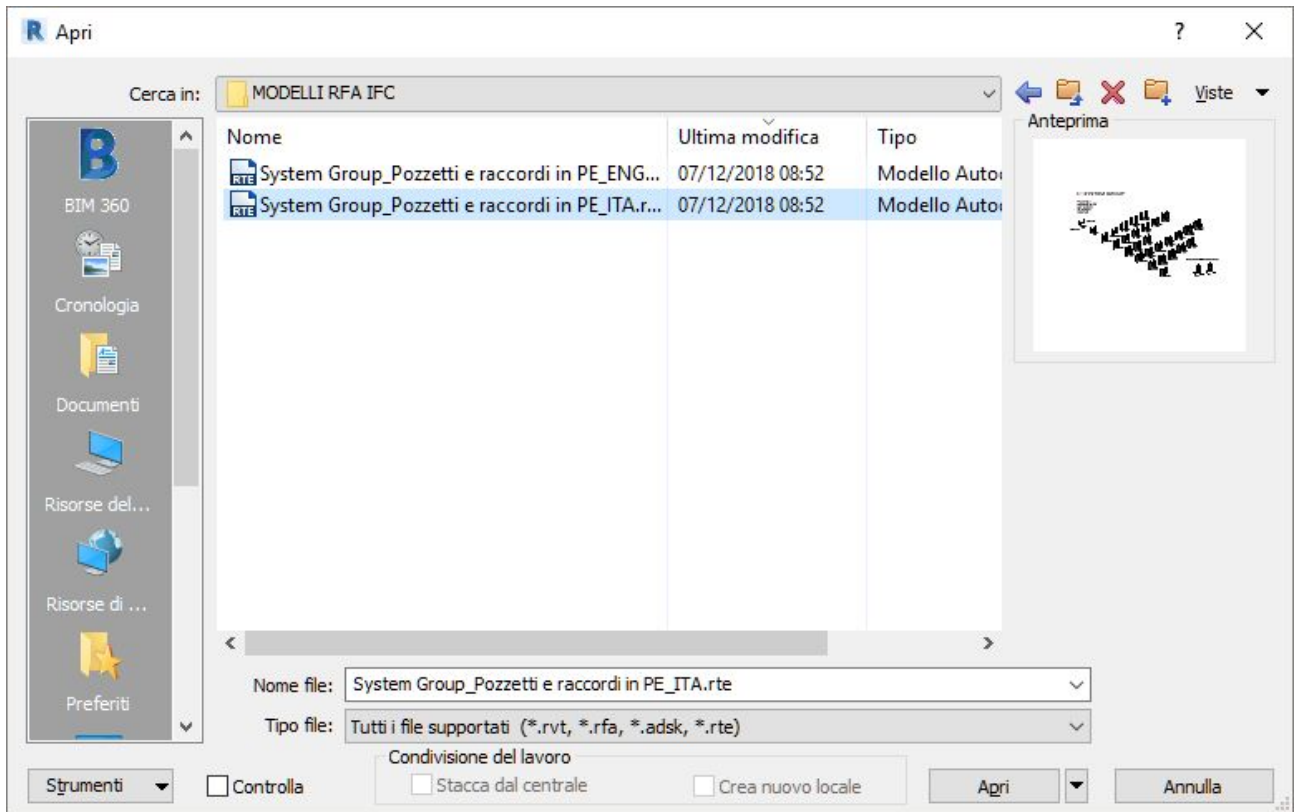
You can add **"System Group\_Pozzetti e raccordi in PE\_ITA.rte"** as a loadable family. The object is contained in a revit template file .rte from which it is possible to extract the .rfa object.

You can add the object following the instructions below:

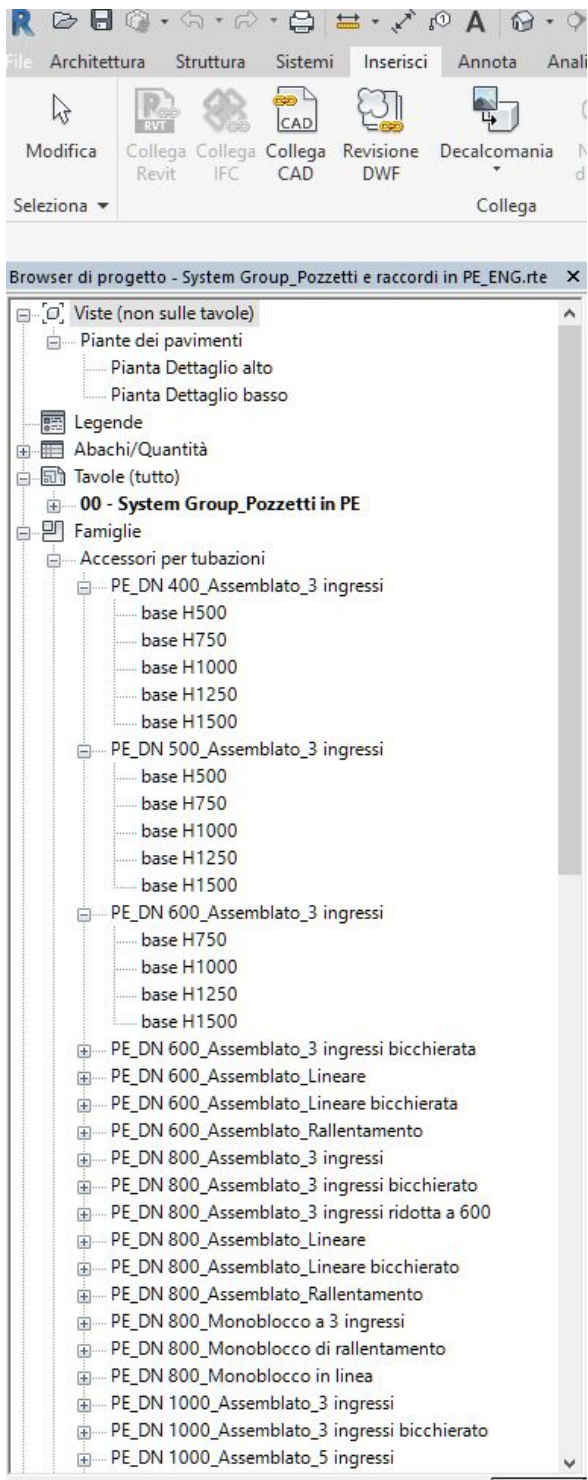
1. select from the command tab the "Insert" button




2. select the downloaded SystemGroup file path>> Open



3. the object is now contained in the family list inside the RVT project



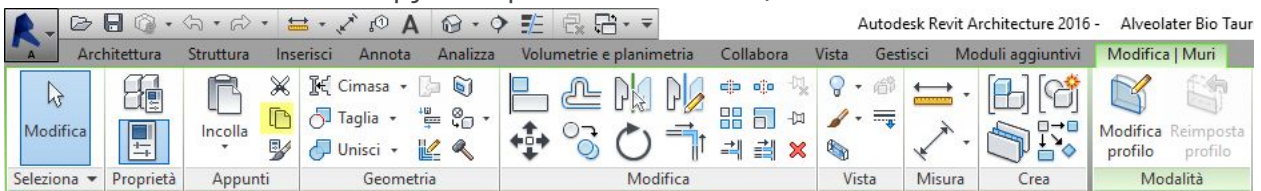
You can add a BIM object in an .ifc extension to the project following this method:

|  |  |
|--|--|
|  | <p>1. starting from the bottom  &gt;&gt;<br/>Open&gt;&gt; IFC</p> |
|--|--|



2. a file selection window will appear.  
Select the System Group IFC file path

3. Select the object and copy it (Ctrl + C from the keyboard or use the Edit tab on the bar and select the copy to Clipboard command).



4. Now, in the target window, paste the Bim object file (Ctrl + V from the keyboard) or use the Edit and Paste command tab.



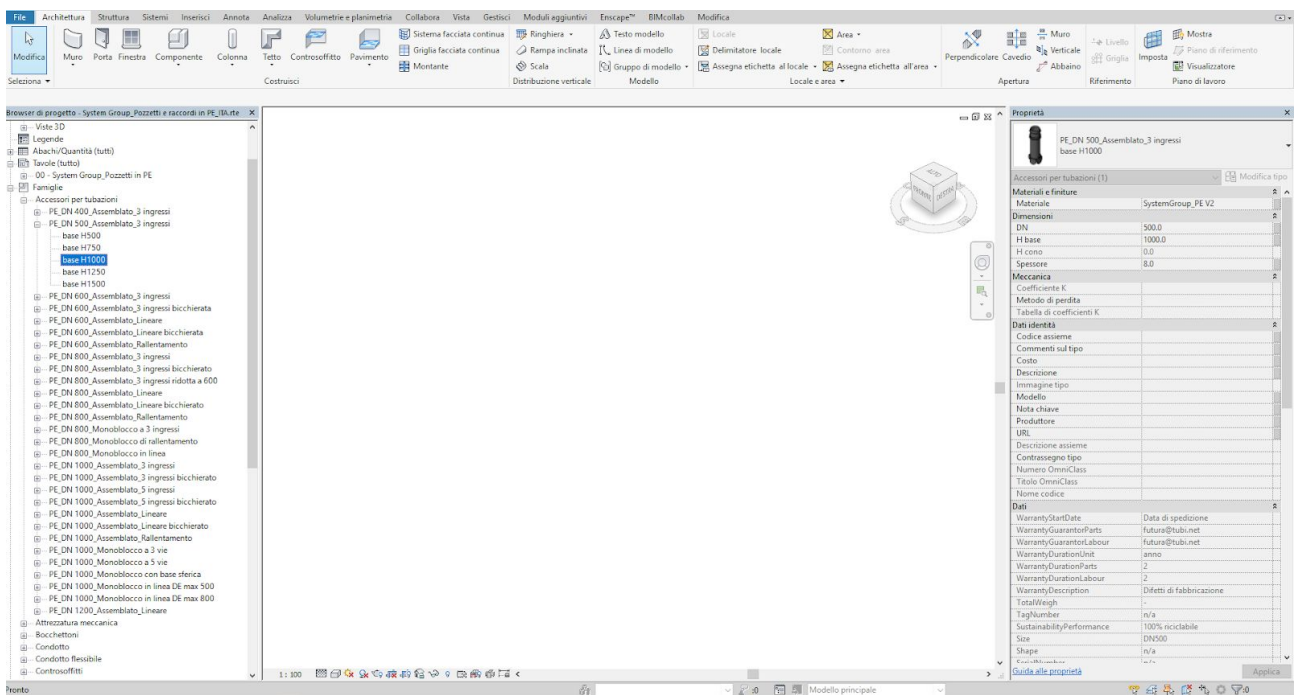
This adds a new family type to the family type list.  
The Bim object is now available for use in the project file.

## 5 - Using BIM object “SystemGroup\_Pozzetti\_PE”

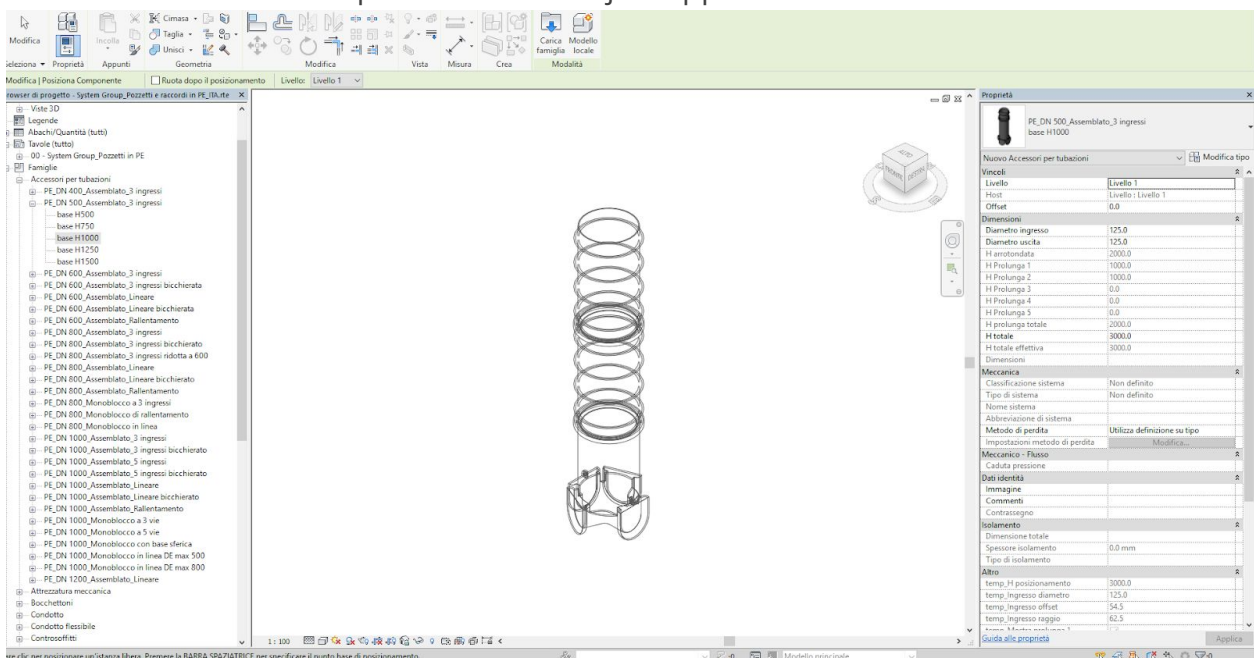
The loaded object in the project is contained in the “Pipe Accessory” category and for this reason it can be combined with pipe elements inside a project.

You can insert the object in the project work area by a 3D view or by a plan view. We will show a 3D insert method for a better comprehension.

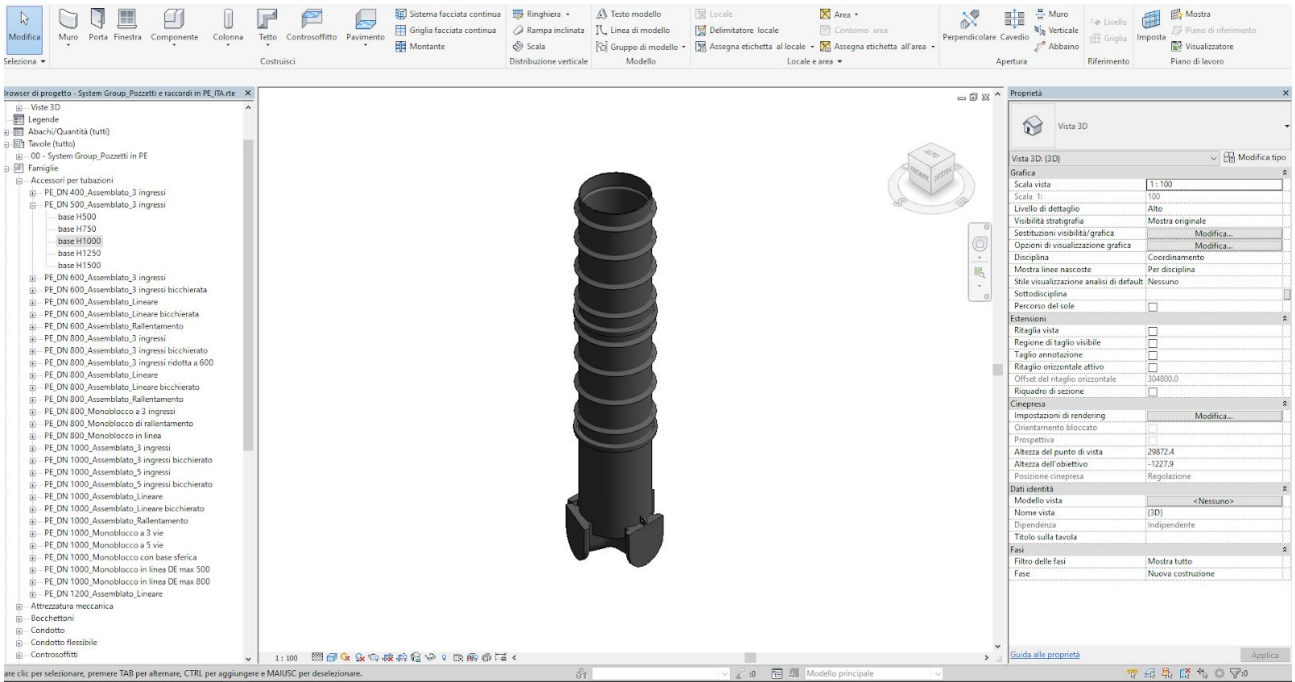
1. In order to use the object inside the model, you have to select the object in the families list in your project browser on the left of your revit windows and drag it to the work area.



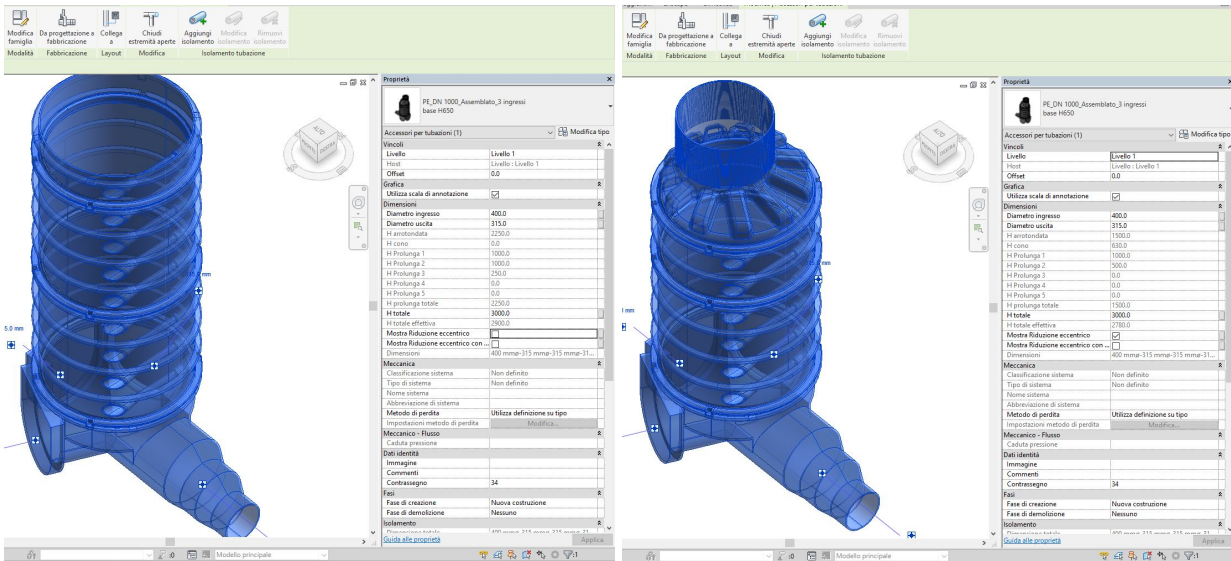
2. At that moment a preview of the object appear on the screen.



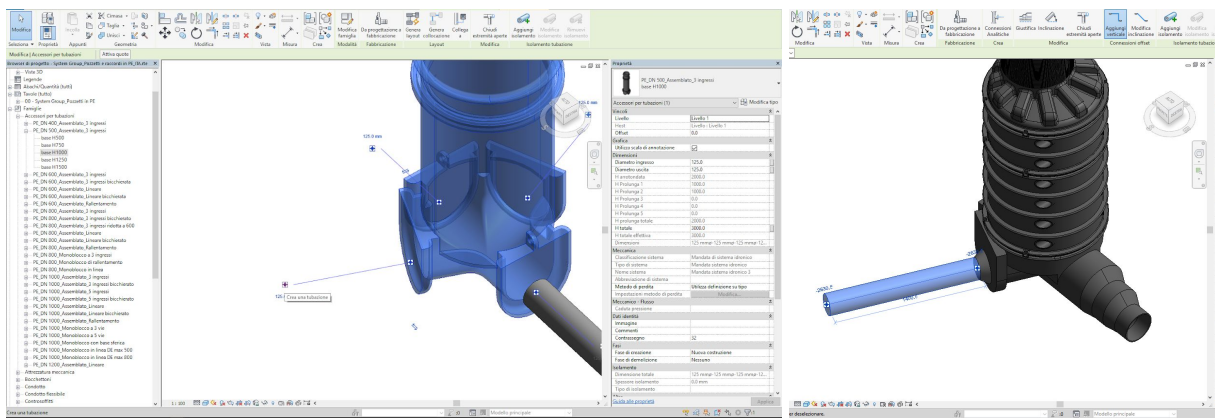
### 3. Now you have to drop the object to the placement spot desired



### 4. Once placed the object, you can edit the custom parameters as, for examples, the manhole base type ora top enclosure part by selecting the assigned field on the properties tab.



### 5. Then, starting from the placed manhole it is possible to create pipe elements in order to create, or connect to, the piping system.



## 6- Supply conditions

The service is offered by System Group SPA "as is", in good faith in the substantial respect of the rules, and no responsibility can be accepted for any damages deriving from use, losses, lost profits, etc. suffered as a result of use.

For more information on the IFC (Industry Foundation Class), visit the BuildingSmart website at <http://www.buildingsmart-tech.org/specifications/ifc-overview>

## 7 - Contacts

System Group technical division is at your disposal for informations about the right application of the products according to the best practices of use.

SYSTEM GROUP TECHNICAL DIVISION

[tecnico@tubi.net](mailto:tecnico@tubi.net)

Please come back to:

[www.tubi.net](http://www.tubi.net)