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MAGNUM

BIM Object Guide:

MAGNUM

Versione

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BIM Object Guide System Group SPA:

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1.0 Introduction:

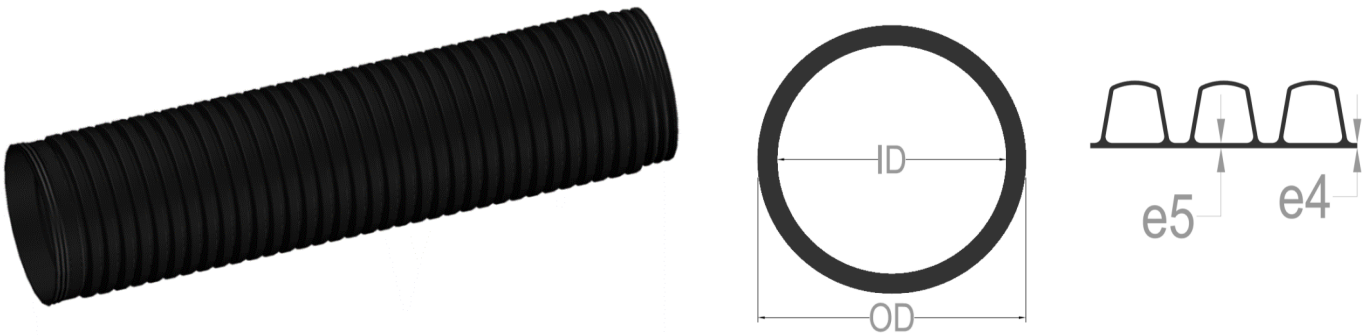
This document guides the use of the BIM System Group Catalog objects:

High density polyethylene (HDPE) 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 black colour, externally corrugated of black colour.

Class of ring stiffness SN4 (equal to 4 kN/m²) or SN8 (equal to 8 kN/m²) measured according to EN ISO 9969, produced for continuous coextrusion of both layers in conformity with European standards UNI EN 13476 - 3 for structured HDPE 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 ø125 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.



DN/OD	ID _{medio}	OD _{min}	Wall thickness		Ring Stiffness		Lenght of pipe*
			e4 min	e5 min	kN/m ²		
mm					kN/m ²		m
125	107	124,3	1,1	1,0	> 4	> 8	6,0
160	137	159,1	1,2	1,0	> 4	> 8	6,0
200	172	198,8	1,4	1,1	> 4	> 8	6,0
315	272	313,2	1,9	1,6	> 4	> 8	6,25
400	347	397,6	2,3	2,0	> 4	> 8	6,30
500	433	497	2,8	2,8	> 4	> 8	6,30
630	535	626,2	3,3	3,3	> 4	> 8	6,70
800	678	795,2	4,1	4,1	> 4	> 8	6,70
1000	852	994	5,0	5,0	> 4	> 8	6,70
1200	1030	1192,8	5,0	5,0	> 4	> 8	6,70

DN/ID	ID _{MIN}	OD	Wall thickness		Ring Stiffness		Lenght of pipe*
			e4 min	e5 min	kN/m ²		
mm					kN/m ²		m
250	245	284	1,8	1,5	> 4	> 8	6,60
300	294	350	2	1,7	> 4	> 8	6,60
400	392	468	2,5	2,3	> 4	> 8	6,60
500	490	565	3,0	3,0	> 4	> 8	6,60
600	588	701	3,5	3,5	> 4	> 8	6,55
800	785	935	4,5	4,5	> 4	> 8	6,55

* The total lenght of the bar can change without notice

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 Parametri

The parameters included in the BIM:

2.1 Pset_Classification

Uniclass2015Code	A classification code, e.g. Uniclass2015.
AccessibilityPerformance	The accessibility issue(s) which the object satisfies.
Application	

2.1 Pset_Data

VicatSofteningTemperature	
NominalDiameterDN/ID	
NominalDiameterDN/OD	
NominalHeight	Typically the vertical or secondary characteristic dimension.
NominalLength	Typically the larger or primary horizontal dimension.
NominalStiffnessSN	The nominal stiffness according to EN ISO 9969
NominalWidth	Nominal width of product, typically the characteristic or secondary horizontal or characteristic dimension.
TensileStrainAtYield	According to ISO 527-2
TensileStressAtYield	According to ISO 527-2
ThermalConductivity	
ThermalLinearCoefficient	
TightnessOfElastomericRingSealJointMaximumNegativePressure	
TightnessOfElastomericRingSealJointMaximumPickPressure	
InternalDiameterID	
InternalWallMaterial	
ISO14001	
ISO18001	
ISO9001	
MaximumJointDeflection	
MaxTemperature	
MInInternalWallThicknessE5min	
MinTemperature	
MininumShortTermElasticityModulus	
MinWallThicknessE4min	
ExternalDiameterOD	
ExternalWallMaterial	
Features	Other important characteristics or features relevant to product specification.
Finish	Characteristic or primary finish of product.
Fittings	
Grade	Standard grading which the product corresponds.
ImpactResistance	According to ISO 3127
ElectricalSurfaceResistance	
RingFlexibility	Ring flexibility according to EN ISO 13968 (%)

RingStiffness	The ring stiffness according to EN ISO 9969 (kN/m ²)
ContructionEightEc	

2.1 Pset_Cobie

Description	A description of the type of object to detail any design intent.
ModelNumber	The product, item or unit number assigned by the manufacturer of the object.
ModelReference	The name of the object as used by the manufacturer.
Name	A unique human-readable alphanumeric name that begins with the product type.
Name	Definition
Manufacturer	Email address for the organisation responsible for supplying or manufacturing the object
ManufacturerName	
Material	Characteristic or primary material of product.
AssetIdentifier	The identification assigned to an asset that enables its differentiation from other assets.
AssetType	An indication of whether the object is fixed or movable.
BarCode	The identity of the bar code (or rfid) given to an occurrence of the product (per instance).
WallPipeSection	
WarrantyDescription	Description of the warranty content and any exclusions.
WarrantyDurationLabour	Duration of labour warranty.
WarrantyDurationParts	Duration of parts warranty.
WarrantyDurationUnit	Duration of warranties (typical value is 'years').
WarrantyGuarantorLabour	Email address for the organisation responsible for the labour warranty.
WarrantyGuarantorParts	Email address for the organisation responsible for the parts warranty.
WarrantyStartDate	The date on which the warranty commences.
Weight	
DurationUnit	Duration of expected life (typical value is 'years')
ExpectedLife	The typical service life of the object.
InstallationDate	The date that the manufactured item was installed (per instance).
Replacement cost	An indicative cost for unit replacement.
SustainabilityPerformance	Description of the sustainability issue(s) which the object satisfies
TagNumber	The tag number assigned to an occurrence of a product by the occupier (per instance).
ThirdPartCertificationBody	Third part certifications
TotalLenght	
TraceabilityCode	Marking for the traceability of the product
BetoniteGasket	Bentonitic sealing device
CEMarkingRequirement	CE Marking Requirements

CodePerformance	The code compliance requirement(s) which the object satisfies
Colour	Characteristic or primary colour of product.
Constituents	Optional constituent features, parts or finishes.
Shape	Characteristic shape of product.
Size	Characteristic size of product.
Standard	Standard specification
StandardJointCouplingWith1Gasket	Specification of the coupling joint
StandardJointIntegratedSocketWith1ElastometricGasket	Specification of the integrated socket joint
SurfaceStatusAndFinishing	Surface status and finishing

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>

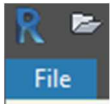
Please note that System Group assumes no responsibility for the supply of IFC and RVT files, its accuracy, reliability and accuracy, nor for any damages, losses, lost profits, etc. as a result of its use.

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

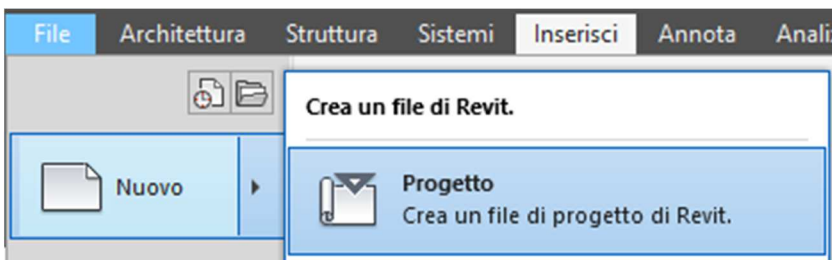
4 - Load the BIM object in Autodesk Revit

The BIM object "SystemGroup_Magnum" 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.

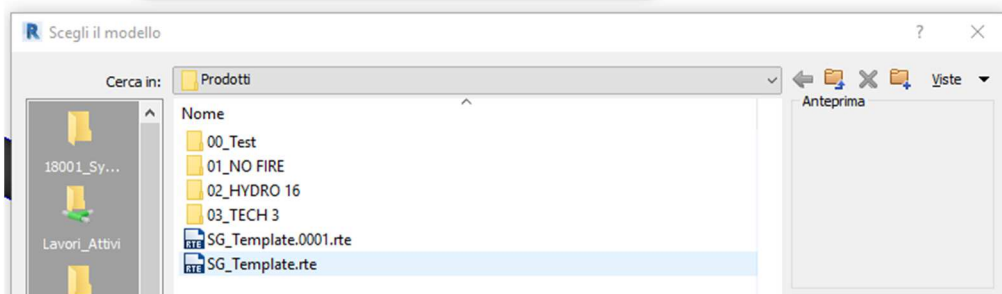
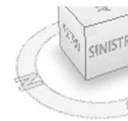
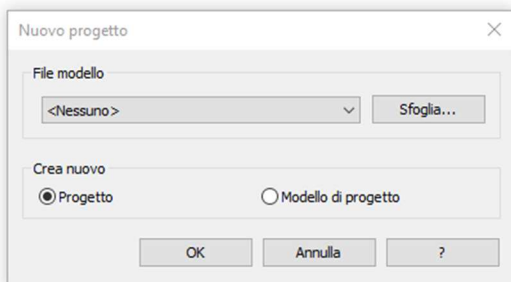
The typical method for adding a BIM object to the project with the extension .rfa (Revit Family) is as follows:



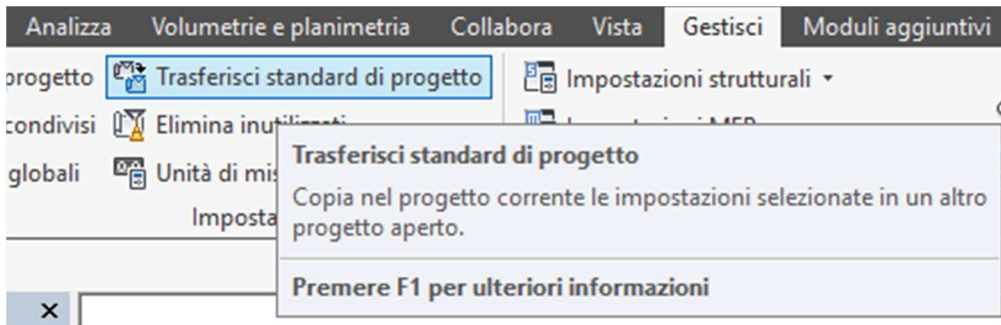
1. Select from file >>New>>Project



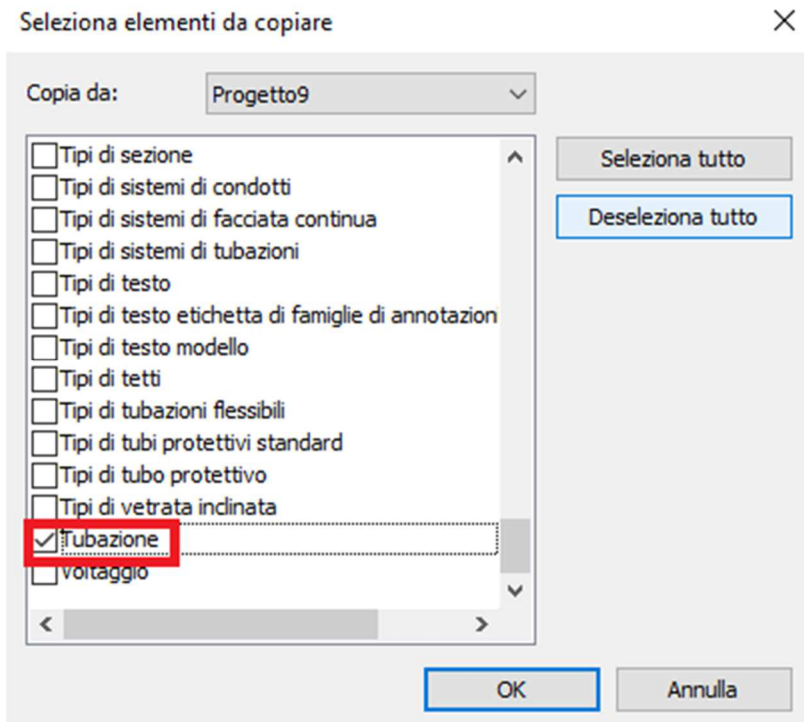
2. When the template selection window appears select Browse and find the file path with the .rte extension SystemGroup downloaded >> Open and then give ok in the selection window.




3. A new Revit file, containing the Magnum system family can be used normally.
4. To import the piping system family into your project, return to the Manage >> Transfer Project Standards window



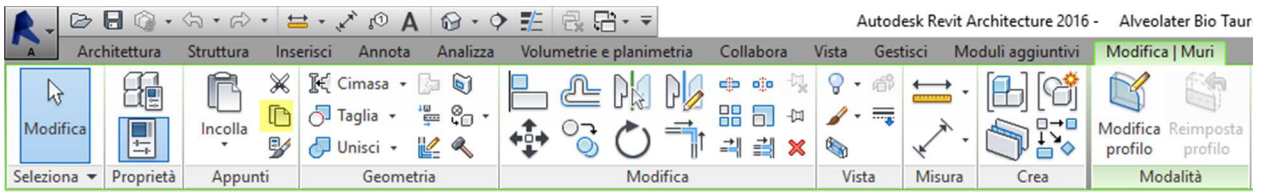
- When the new window is opened, click <Deselect all> and check only the <Piping> entry, in this way the system family contained in the <System Group> template will be transferred to the project in use



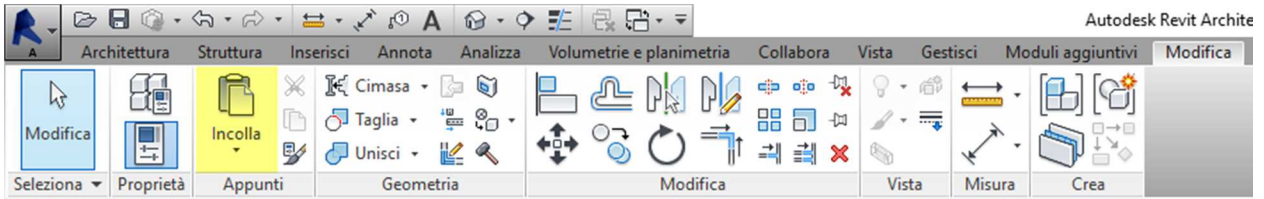
The typical method for adding a BIM-object to the Project is:

	<ol style="list-style-type: none"> 1. Select form icon  >> Open>> IFC 2. The program will open a new window with the inserted BIM object
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- Select the object and Copy it (press Ctrl + C on keyboard) or use Edit tab on the toolbar and select the Copy to Clipboard command.

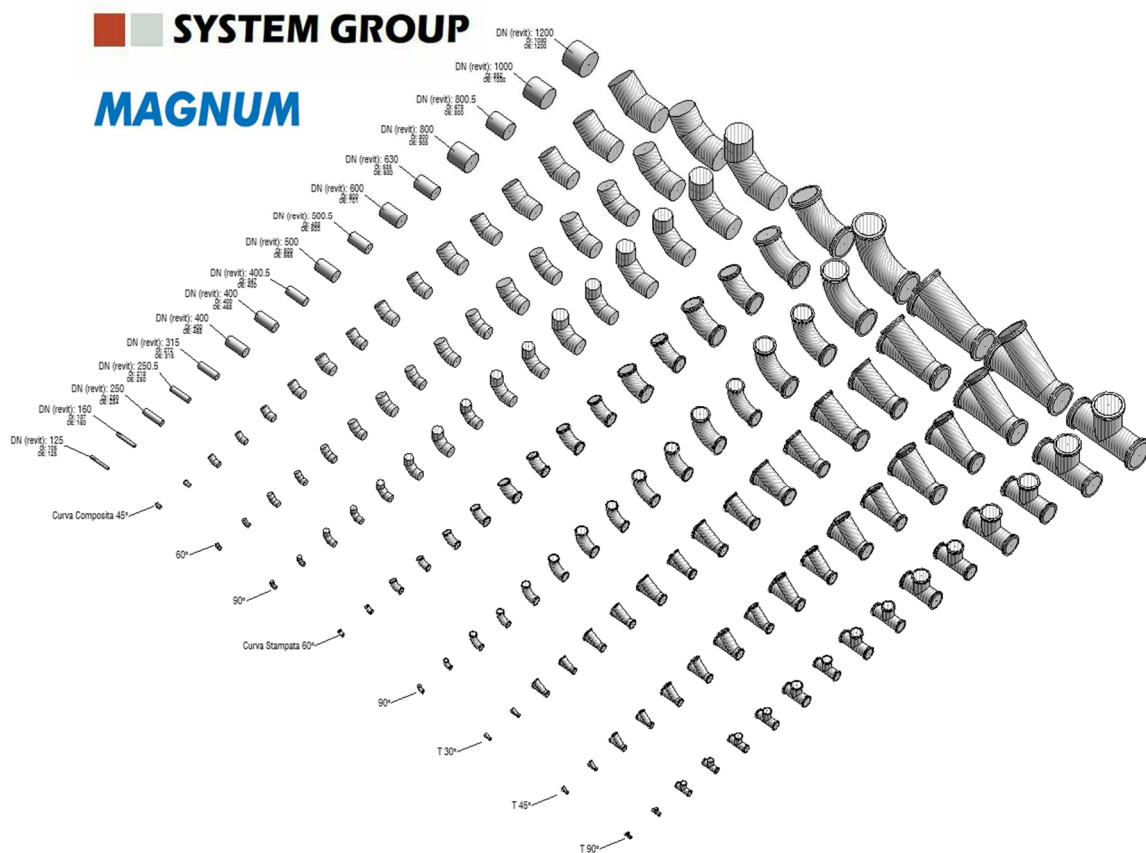


7. In the target window, paste the BIM object file (Ctrl + V on the keyboard) or use the Edit and Paste command.



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 "Magnum"



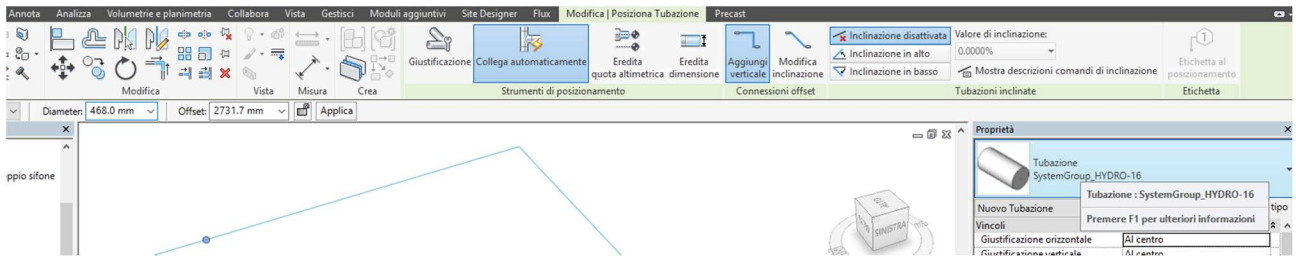
The just loaded object belongs to the "Pipe" category.

The insertion in the work area can be done in 2D plan view or 3D view.

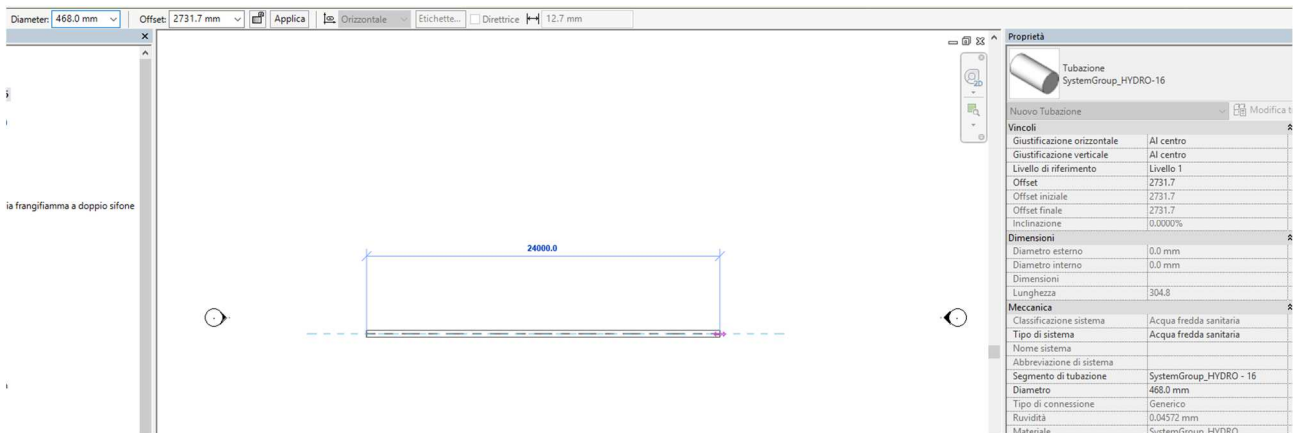
1. To use the "SystemGroup_Magnum" pipe object, simply select the Systems >> Piping command



2. Be sure to use "SystemGroup_Magnum" from the Properties panel



3. At this point it will be possible to draw the pipe assigning with the first left mouse click the starting point and with the second click the end point.



4. It will be possible to change the diameter of the pipe according to the "SystemGroup Magnum" sizes provided by the manufacturer by clicking on Diameter and scrolling the drop-down menu.



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

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Please come back to:

www.tubi.net