

**** NOTE: This is an automatically generated DL rendering of the SEWERNET ontology v1, available from <http://sewernet.msem.univ-montp2.fr/> (generated on 04-02-2025). The algorithm in Protégé 5.6.4 ('save as ... latex') did not also include DOLCE-lite that SEWERNET imports, and thus this rendering is only *partial*. ****

Classes

AirValve

AirValve \sqsubseteq Apparatus
AirValve $\sqsubseteq \neg$ ConnectionPoint
AirValve $\sqsubseteq \neg$ Flowmeter
AirValve $\sqsubseteq \neg$ Valve
AirValve $\sqsubseteq \neg$ ConnectionPoint
Flowmeter $\sqsubseteq \neg$ ConnectionPoint
Valve $\sqsubseteq \neg$ ConnectionPoint
AirValve $\sqsubseteq \neg$ Flowmeter
ConnectionPoint $\sqsubseteq \neg$ Flowmeter
Valve $\sqsubseteq \neg$ Flowmeter
AirValve $\sqsubseteq \neg$ Valve
ConnectionPoint $\sqsubseteq \neg$ Valve
Flowmeter $\sqsubseteq \neg$ Valve

Apparatus

Apparatus \sqsubseteq Node

AttributeAuthor

AttributeAuthor \sqsubseteq SocialObject
AttributeAuthor $\sqsubseteq \exists$ participant-in Geolocation

Cement

Cement \sqsubseteq Material
Cement $\sqsubseteq \neg$ Concrete
Cement $\sqsubseteq \neg$ Glass
Cement $\sqsubseteq \neg$ Masonry
Cement $\sqsubseteq \neg$ Metallic
Cement $\sqsubseteq \neg$ NaturalStone
Cement $\sqsubseteq \neg$ Plastic
Cement $\sqsubseteq \neg$ Concrete
Glass $\sqsubseteq \neg$ Concrete
Masonry $\sqsubseteq \neg$ Concrete
Metallic $\sqsubseteq \neg$ Concrete
NaturalStone $\sqsubseteq \neg$ Concrete

Plastic $\sqsubseteq \neg$ Concrete
Cement $\sqsubseteq \neg$ Glass
Concrete $\sqsubseteq \neg$ Glass
Masonry $\sqsubseteq \neg$ Glass
Metallic $\sqsubseteq \neg$ Glass
NaturalStone $\sqsubseteq \neg$ Glass
Plastic $\sqsubseteq \neg$ Glass
Cement $\sqsubseteq \neg$ Masonry
Concrete $\sqsubseteq \neg$ Masonry
Glass $\sqsubseteq \neg$ Masonry
Metallic $\sqsubseteq \neg$ Masonry
NaturalStone $\sqsubseteq \neg$ Masonry
Plastic $\sqsubseteq \neg$ Masonry
Cement $\sqsubseteq \neg$ Metallic
Concrete $\sqsubseteq \neg$ Metallic
Glass $\sqsubseteq \neg$ Metallic
Masonry $\sqsubseteq \neg$ Metallic
NaturalStone $\sqsubseteq \neg$ Metallic
Plastic $\sqsubseteq \neg$ Metallic
Cement $\sqsubseteq \neg$ NaturalStone
Concrete $\sqsubseteq \neg$ NaturalStone
Glass $\sqsubseteq \neg$ NaturalStone
Masonry $\sqsubseteq \neg$ NaturalStone
Metallic $\sqsubseteq \neg$ NaturalStone
Plastic $\sqsubseteq \neg$ NaturalStone
Cement $\sqsubseteq \neg$ Plastic
Concrete $\sqsubseteq \neg$ Plastic
Glass $\sqsubseteq \neg$ Plastic
Masonry $\sqsubseteq \neg$ Plastic
Metallic $\sqsubseteq \neg$ Plastic
NaturalStone $\sqsubseteq \neg$ Plastic

Channel

Channel \sqsubseteq Conduit

Collection

Collection \sqsubseteq ConduitFunction
Collection $\sqsubseteq \neg$ Transport

CombinedConduit

CombinedConduit \sqsubseteq ConduitCategory
CombinedConduit $\sqsubseteq \neg$ StormwaterConduit
CombinedConduit $\sqsubseteq \neg$ WastewaterConduit

CombinedConduit $\sqsubseteq \neg$ StormwaterConduit
WastewaterConduit $\sqsubseteq \neg$ StormwaterConduit
CombinedConduit $\sqsubseteq \neg$ WastewaterConduit
StormwaterConduit $\sqsubseteq \neg$ WastewaterConduit

CombinedNetwork

CombinedNetwork \sqsubseteq Network
CombinedNetwork $\sqsubseteq \neg$ StormwaterNetwork
CombinedNetwork $\sqsubseteq \neg$ WastewaterNetwork
CombinedNetwork $\sqsubseteq \neg$ StormwaterNetwork
WastewaterNetwork $\sqsubseteq \neg$ StormwaterNetwork
CombinedNetwork $\sqsubseteq \neg$ WastewaterNetwork
StormwaterNetwork $\sqsubseteq \neg$ WastewaterNetwork

CombinedWastewater

CombinedWastewater \sqsubseteq SewerWater

Concrete

Concrete \sqsubseteq Material
Concrete $\sqsubseteq \neg$ Cement
Glass $\sqsubseteq \neg$ Cement
Masonry $\sqsubseteq \neg$ Cement
Metallic $\sqsubseteq \neg$ Cement
NaturalStone $\sqsubseteq \neg$ Cement
Plastic $\sqsubseteq \neg$ Cement
Concrete $\sqsubseteq \neg$ Cement
Concrete $\sqsubseteq \neg$ Glass
Concrete $\sqsubseteq \neg$ Masonry
Concrete $\sqsubseteq \neg$ Metallic
Concrete $\sqsubseteq \neg$ NaturalStone
Concrete $\sqsubseteq \neg$ Plastic
Cement $\sqsubseteq \neg$ Glass
Concrete $\sqsubseteq \neg$ Glass
Masonry $\sqsubseteq \neg$ Glass
Metallic $\sqsubseteq \neg$ Glass
NaturalStone $\sqsubseteq \neg$ Glass
Plastic $\sqsubseteq \neg$ Glass
Cement $\sqsubseteq \neg$ Masonry
Concrete $\sqsubseteq \neg$ Masonry
Glass $\sqsubseteq \neg$ Masonry
Metallic $\sqsubseteq \neg$ Masonry
NaturalStone $\sqsubseteq \neg$ Masonry

Plastic $\sqsubseteq \neg$ Masonry
 Cement $\sqsubseteq \neg$ Metallic
 Concrete $\sqsubseteq \neg$ Metallic
 Glass $\sqsubseteq \neg$ Metallic
 Masonry $\sqsubseteq \neg$ Metallic
 NaturalStone $\sqsubseteq \neg$ Metallic
 Plastic $\sqsubseteq \neg$ Metallic
 Cement $\sqsubseteq \neg$ NaturalStone
 Concrete $\sqsubseteq \neg$ NaturalStone
 Glass $\sqsubseteq \neg$ NaturalStone
 Masonry $\sqsubseteq \neg$ NaturalStone
 Metallic $\sqsubseteq \neg$ NaturalStone
 Plastic $\sqsubseteq \neg$ NaturalStone
 Cement $\sqsubseteq \neg$ Plastic
 Concrete $\sqsubseteq \neg$ Plastic
 Glass $\sqsubseteq \neg$ Plastic
 Masonry $\sqsubseteq \neg$ Plastic
 Metallic $\sqsubseteq \neg$ Plastic
 NaturalStone $\sqsubseteq \neg$ Plastic

Conduit

Conduit $\sqsubseteq \exists$ has-quality Shape
 Conduit $\sqsubseteq \exists$ generic-dependent ConduitFunction
 Conduit $\sqsubseteq \exists$ has-quality Dimension
 Conduit \sqsubseteq NetworkElement
 Conduit $\sqsubseteq \exists$ has-quality Length
 Conduit $\sqsubseteq \exists$ specific-constant-constituent Material
 Conduit $\sqsubseteq \exists$ has-quality Slope
 Conduit $\sqsubseteq \exists$ has-quality FlowDirection
 Conduit $\sqsubseteq \exists$ has-quality ConduitCirculationMode
 Conduit $\sqsubseteq \exists$ has-quality Diameter
 Conduit $\sqsubseteq \exists$ weak-connection Node

ConduitCategory

ConduitCategory $\sqsubseteq \exists$ hasBearer Conduit
 ConduitCategory $\sqsubseteq \exists$ generically-dependent-on SewerWater
 ConduitCategory \sqsubseteq non-physical-object

ConduitCirculationMode

ConduitCirculationMode $\sqsubseteq \exists$ inherent-in Conduit
 ConduitCirculationMode \sqsubseteq quality

ConduitDefect

ConduitDefect \sqsubseteq feature
ConduitDefect $\sqsubseteq \exists$ participant-in Repair
ConduitDefect $\sqsubseteq \exists$ part-of NetworkElement

ConduitFunction

ConduitFunction \sqsubseteq non-physical-object
ConduitFunction $\sqsubseteq \exists$ generically-dependent-on Conduit

ConduitPoint

ConduitPoint $\sqsubseteq \forall$ weak-connection Node
ConduitPoint \sqsubseteq NetworkElementPart

ConnectionPoint

ConnectionPoint \sqsubseteq Apparatus
ConnectionPoint $\sqsubseteq \neg$ AirValve
Flowmeter $\sqsubseteq \neg$ AirValve
Valve $\sqsubseteq \neg$ AirValve
ConnectionPoint $\sqsubseteq \neg$ AirValve
ConnectionPoint $\sqsubseteq \neg$ Flowmeter
ConnectionPoint $\sqsubseteq \neg$ Valve
AirValve $\sqsubseteq \neg$ Flowmeter
ConnectionPoint $\sqsubseteq \neg$ Flowmeter
Valve $\sqsubseteq \neg$ Flowmeter
AirValve $\sqsubseteq \neg$ Valve
ConnectionPoint $\sqsubseteq \neg$ Valve
Flowmeter $\sqsubseteq \neg$ Valve

Coordinate

Coordinate $\sqsubseteq \exists$ q-location-of Geometry
Coordinate \sqsubseteq space-region

Crack

Crack \sqsubseteq ConduitDefect

DateTimeInterval

DateTimeInterval \sqsubseteq ProperInterval

Decommissioned

Decommissioned \sqsubseteq UtilityObjectStatus

DefectiveJoint

DefectiveJoint \sqsubseteq ConduitDefect

Diameter

Diameter \sqsubseteq physical-quality

Diameter $\sqsubseteq \exists$ inherent-in ManholeCover

Diameter $\sqsubseteq \exists$ inherent-in Conduit

Dimension

Dimension \sqsubseteq physical-quality

Dimension $\sqsubseteq \exists$ inherent-in Conduit

DischargeStructure

DischargeStructure \sqsubseteq Structure

DischargeStructure $\sqsubseteq \neg$ Inlet

DischargeStructure $\sqsubseteq \neg$ Manhole

DischargeStructure $\sqsubseteq \neg$ PumpingStation

DischargeStructure $\sqsubseteq \neg$ RetentionBasin

DischargeStructure $\sqsubseteq \neg$ StormOverflow

DischargeStructure $\sqsubseteq \neg$ TreatmentPlant

DischargeStructure $\sqsubseteq \neg$ Inlet

Manhole $\sqsubseteq \neg$ Inlet

PumpingStation $\sqsubseteq \neg$ Inlet

RetentionBasin $\sqsubseteq \neg$ Inlet

StormOverflow $\sqsubseteq \neg$ Inlet

TreatmentPlant $\sqsubseteq \neg$ Inlet

DischargeStructure $\sqsubseteq \neg$ Manhole

Inlet $\sqsubseteq \neg$ Manhole

PumpingStation $\sqsubseteq \neg$ Manhole

RetentionBasin $\sqsubseteq \neg$ Manhole

StormOverflow $\sqsubseteq \neg$ Manhole

TreatmentPlant $\sqsubseteq \neg$ Manhole

DischargeStructure $\sqsubseteq \neg$ PumpingStation

Inlet $\sqsubseteq \neg$ PumpingStation

Manhole $\sqsubseteq \neg$ PumpingStation

RetentionBasin $\sqsubseteq \neg$ PumpingStation

StormOverflow $\sqsubseteq \neg$ PumpingStation

TreatmentPlant $\sqsubseteq \neg$ PumpingStation

DischargeStructure $\sqsubseteq \neg$ RetentionBasin

Inlet $\sqsubseteq \neg$ RetentionBasin

Manhole $\sqsubseteq \neg$ RetentionBasin

PumpingStation $\sqsubseteq \neg$ RetentionBasin

StormOverflow $\sqsubseteq \neg$ RetentionBasin

TreatmentPlant $\sqsubseteq \neg$ RetentionBasin
DischargeStructure $\sqsubseteq \neg$ StormOverflow
Inlet $\sqsubseteq \neg$ StormOverflow
Manhole $\sqsubseteq \neg$ StormOverflow
PumpingStation $\sqsubseteq \neg$ StormOverflow
RetentionBasin $\sqsubseteq \neg$ StormOverflow
TreatmentPlant $\sqsubseteq \neg$ StormOverflow
DischargeStructure $\sqsubseteq \neg$ TreatmentPlant
Inlet $\sqsubseteq \neg$ TreatmentPlant
Manhole $\sqsubseteq \neg$ TreatmentPlant
PumpingStation $\sqsubseteq \neg$ TreatmentPlant
RetentionBasin $\sqsubseteq \neg$ TreatmentPlant
StormOverflow $\sqsubseteq \neg$ TreatmentPlant

Dislocation

Dislocation \sqsubseteq ConduitDefect

Disused

Disused \sqsubseteq UtilityObjectStatus

DownstreamConduitExtremity

DownstreamConduitExtremity \sqsubseteq ConduitPoint

Duration

Duration \sqsubseteq TemporalDuration

DurationDescription

DurationDescription \sqsubseteq GeneralDurationDescription

Elevation

Elevation $\sqsubseteq \exists$ inherent-in NetworkElementPart

Elevation $\sqsubseteq \exists$ inherent-in Node

Elevation \sqsubseteq spatial-location_q

FlowDirection

FlowDirection $\sqsubseteq \exists$ inherent-in Conduit

FlowDirection \sqsubseteq physical-quality

Flowmeter

Flowmeter \sqsubseteq Apparatus
ConnectionPoint $\sqsubseteq \neg$ AirValve
Flowmeter $\sqsubseteq \neg$ AirValve
Valve $\sqsubseteq \neg$ AirValve
AirValve $\sqsubseteq \neg$ ConnectionPoint
Flowmeter $\sqsubseteq \neg$ ConnectionPoint
Valve $\sqsubseteq \neg$ ConnectionPoint
Flowmeter $\sqsubseteq \neg$ AirValve
Flowmeter $\sqsubseteq \neg$ ConnectionPoint
Flowmeter $\sqsubseteq \neg$ Valve
AirValve $\sqsubseteq \neg$ Valve
ConnectionPoint $\sqsubseteq \neg$ Valve
Flowmeter $\sqsubseteq \neg$ Valve

ForceMain

ForceMain \sqsubseteq ConduitCirculationMode
ForceMain $\sqsubseteq \neg$ Gravity
ForceMain $\sqsubseteq \neg$ Vacuum
ForceMain $\sqsubseteq \neg$ Gravity
Vacuum $\sqsubseteq \neg$ Gravity
ForceMain $\sqsubseteq \neg$ Vacuum
Gravity $\sqsubseteq \neg$ Vacuum

Functional

Functional \sqsubseteq UtilityObjectStatus

GeneralDurationDescription

GeneralDurationDescription \sqsubseteq TemporalDuration

Geolocation

Geolocation $\sqsubseteq \exists$ participant NetworkElement
Geolocation $\sqsubseteq \exists$ participant NetworkElementPart
Geolocation $\sqsubseteq \exists$ hasTime TemporalEntity
Geolocation $\sqsubseteq \exists$ has-quality GeolocationQuality
Geolocation \sqsubseteq achievement
Geolocation $\sqsubseteq \exists$ participant AttributeAuthor

GeolocationQuality

GeolocationQuality $\sqsubseteq \exists$ inherent-in Geolocation

GeolocationQuality \sqsubseteq temporal-quality

GeolocationQualityXY

GeolocationQualityXY \sqsubseteq GeolocationQuality

GeolocationQualityZ

GeolocationQualityZ \sqsubseteq GeolocationQuality

Geometry

Geometry $\sqsubseteq \exists$ inherent-in NetworkElement

Geometry $\sqsubseteq \exists$ q-location Coordinate

Geometry \sqsubseteq spatial-location_q

Geometry $\sqsubseteq \exists$ inherent-in NetworkElementPart

Glass

Glass \sqsubseteq Material

Concrete $\sqsubseteq \neg$ Cement

Glass $\sqsubseteq \neg$ Cement

Masonry $\sqsubseteq \neg$ Cement

Metallic $\sqsubseteq \neg$ Cement

NaturalStone $\sqsubseteq \neg$ Cement

Plastic $\sqsubseteq \neg$ Cement

Cement $\sqsubseteq \neg$ Concrete

Glass $\sqsubseteq \neg$ Concrete

Masonry $\sqsubseteq \neg$ Concrete

Metallic $\sqsubseteq \neg$ Concrete

NaturalStone $\sqsubseteq \neg$ Concrete

Plastic $\sqsubseteq \neg$ Concrete

Glass $\sqsubseteq \neg$ Cement

Glass $\sqsubseteq \neg$ Concrete

Glass $\sqsubseteq \neg$ Masonry

Glass $\sqsubseteq \neg$ Metallic

Glass $\sqsubseteq \neg$ NaturalStone

Glass $\sqsubseteq \neg$ Plastic

Cement $\sqsubseteq \neg$ Masonry

Concrete $\sqsubseteq \neg$ Masonry

Glass $\sqsubseteq \neg$ Masonry

Metallic $\sqsubseteq \neg$ Masonry

NaturalStone $\sqsubseteq \neg$ Masonry

Plastic $\sqsubseteq \neg$ Masonry

Cement $\sqsubseteq \neg$ Metallic

Concrete $\sqsubseteq \neg$ Metallic

Glass $\sqsubseteq \neg$ Metallic

Masonry $\sqsubseteq \neg$ Metallic
NaturalStone $\sqsubseteq \neg$ Metallic
Plastic $\sqsubseteq \neg$ Metallic
Cement $\sqsubseteq \neg$ NaturalStone
Concrete $\sqsubseteq \neg$ NaturalStone
Glass $\sqsubseteq \neg$ NaturalStone
Masonry $\sqsubseteq \neg$ NaturalStone
Metallic $\sqsubseteq \neg$ NaturalStone
Plastic $\sqsubseteq \neg$ NaturalStone
Cement $\sqsubseteq \neg$ Plastic
Concrete $\sqsubseteq \neg$ Plastic
Glass $\sqsubseteq \neg$ Plastic
Masonry $\sqsubseteq \neg$ Plastic
Metallic $\sqsubseteq \neg$ Plastic
NaturalStone $\sqsubseteq \neg$ Plastic

Gravity

Gravity \sqsubseteq ConduitCirculationMode
Gravity $\sqsubseteq \neg$ ForceMain
Vacuum $\sqsubseteq \neg$ ForceMain
Gravity $\sqsubseteq \neg$ ForceMain
Gravity $\sqsubseteq \neg$ Vacuum
ForceMain $\sqsubseteq \neg$ Vacuum
Gravity $\sqsubseteq \neg$ Vacuum

Hole

Hole \sqsubseteq ConduitDefect

Incident

Incident \sqsubseteq achievement
Incident $\sqsubseteq \exists$ hasTime TemporalEntity
Incident $\sqsubseteq \exists$ participant NetworkElement
Incident $\sqsubseteq \exists$ participant NetworkElementPart

Inlet

Inlet \sqsubseteq Structure
Inlet $\sqsubseteq \neg$ DischargeStructure
Manhole $\sqsubseteq \neg$ DischargeStructure
PumpingStation $\sqsubseteq \neg$ DischargeStructure
RetentionBasin $\sqsubseteq \neg$ DischargeStructure
StormOverflow $\sqsubseteq \neg$ DischargeStructure

TreatmentPlant $\sqsubseteq \neg$ DischargeStructure
 Inlet $\sqsubseteq \neg$ DischargeStructure
 Inlet $\sqsubseteq \neg$ Manhole
 Inlet $\sqsubseteq \neg$ PumpingStation
 Inlet $\sqsubseteq \neg$ RetentionBasin
 Inlet $\sqsubseteq \neg$ StormOverflow
 Inlet $\sqsubseteq \neg$ TreatmentPlant
 DischargeStructure $\sqsubseteq \neg$ Manhole
 Inlet $\sqsubseteq \neg$ Manhole
 PumpingStation $\sqsubseteq \neg$ Manhole
 RetentionBasin $\sqsubseteq \neg$ Manhole
 StormOverflow $\sqsubseteq \neg$ Manhole
 TreatmentPlant $\sqsubseteq \neg$ Manhole
 DischargeStructure $\sqsubseteq \neg$ PumpingStation
 Inlet $\sqsubseteq \neg$ PumpingStation
 Manhole $\sqsubseteq \neg$ PumpingStation
 RetentionBasin $\sqsubseteq \neg$ PumpingStation
 StormOverflow $\sqsubseteq \neg$ PumpingStation
 TreatmentPlant $\sqsubseteq \neg$ PumpingStation
 DischargeStructure $\sqsubseteq \neg$ RetentionBasin
 Inlet $\sqsubseteq \neg$ RetentionBasin
 Manhole $\sqsubseteq \neg$ RetentionBasin
 PumpingStation $\sqsubseteq \neg$ RetentionBasin
 StormOverflow $\sqsubseteq \neg$ RetentionBasin
 TreatmentPlant $\sqsubseteq \neg$ RetentionBasin
 DischargeStructure $\sqsubseteq \neg$ StormOverflow
 Inlet $\sqsubseteq \neg$ StormOverflow
 Manhole $\sqsubseteq \neg$ StormOverflow
 PumpingStation $\sqsubseteq \neg$ StormOverflow
 RetentionBasin $\sqsubseteq \neg$ StormOverflow
 TreatmentPlant $\sqsubseteq \neg$ StormOverflow
 DischargeStructure $\sqsubseteq \neg$ TreatmentPlant
 Inlet $\sqsubseteq \neg$ TreatmentPlant
 Manhole $\sqsubseteq \neg$ TreatmentPlant
 PumpingStation $\sqsubseteq \neg$ TreatmentPlant
 RetentionBasin $\sqsubseteq \neg$ TreatmentPlant
 StormOverflow $\sqsubseteq \neg$ TreatmentPlant

Inspection

Inspection $\sqsubseteq \exists$ participant NetworkElement
 Inspection \sqsubseteq accomplishment
 Inspection $\sqsubseteq \exists$ participant NetworkElementPart
 Inspection $\sqsubseteq \exists$ hasTime TemporalEntity

Instant

Instant \sqsubseteq TemporalEntity
Instant $\sqsubseteq \neg$ ProperInterval

Interval

Interval \sqsubseteq TemporalEntity

InvertElevation

InvertElevation $\sqsubseteq \exists$ inherent-in Manhole
InvertElevation \sqsubseteq Elevation

Length

Length $\sqsubseteq \exists$ inherent-in Conduit
Length \sqsubseteq physical-quality

LongitudinalBreakage

LongitudinalBreakage \sqsubseteq ConduitDefect

Maintenance

Maintenance $\sqsubseteq \exists$ hasTime TemporalEntity
Maintenance \sqsubseteq accomplishment
Maintenance $\sqsubseteq \exists$ participant NetworkElementPart
Maintenance $\sqsubseteq \exists$ participant (Operator \sqcup ProjectOwner)
Maintenance $\sqsubseteq \exists$ participant NetworkElement

Manhole

Manhole $\sqsubseteq \exists$ has-quality InvertElevation
Manhole $\sqsubseteq \exists$ has-quality RimElevation
Manhole \sqsubseteq Structure
Inlet $\sqsubseteq \neg$ DischargeStructure
Manhole $\sqsubseteq \neg$ DischargeStructure
PumpingStation $\sqsubseteq \neg$ DischargeStructure
RetentionBasin $\sqsubseteq \neg$ DischargeStructure
StormOverflow $\sqsubseteq \neg$ DischargeStructure
TreatmentPlant $\sqsubseteq \neg$ DischargeStructure
DischargeStructure $\sqsubseteq \neg$ Inlet
Manhole $\sqsubseteq \neg$ Inlet
PumpingStation $\sqsubseteq \neg$ Inlet
RetentionBasin $\sqsubseteq \neg$ Inlet
StormOverflow $\sqsubseteq \neg$ Inlet
TreatmentPlant $\sqsubseteq \neg$ Inlet

Manhole $\sqsubseteq \neg$ DischargeStructure
 Manhole $\sqsubseteq \neg$ Inlet
 Manhole $\sqsubseteq \neg$ PumpingStation
 Manhole $\sqsubseteq \neg$ RetentionBasin
 Manhole $\sqsubseteq \neg$ StormOverflow
 Manhole $\sqsubseteq \neg$ TreatmentPlant
 DischargeStructure $\sqsubseteq \neg$ PumpingStation
 Inlet $\sqsubseteq \neg$ PumpingStation
 Manhole $\sqsubseteq \neg$ PumpingStation
 RetentionBasin $\sqsubseteq \neg$ PumpingStation
 StormOverflow $\sqsubseteq \neg$ PumpingStation
 TreatmentPlant $\sqsubseteq \neg$ PumpingStation
 DischargeStructure $\sqsubseteq \neg$ RetentionBasin
 Inlet $\sqsubseteq \neg$ RetentionBasin
 Manhole $\sqsubseteq \neg$ RetentionBasin
 PumpingStation $\sqsubseteq \neg$ RetentionBasin
 StormOverflow $\sqsubseteq \neg$ RetentionBasin
 TreatmentPlant $\sqsubseteq \neg$ RetentionBasin
 DischargeStructure $\sqsubseteq \neg$ StormOverflow
 Inlet $\sqsubseteq \neg$ StormOverflow
 Manhole $\sqsubseteq \neg$ StormOverflow
 PumpingStation $\sqsubseteq \neg$ StormOverflow
 RetentionBasin $\sqsubseteq \neg$ StormOverflow
 TreatmentPlant $\sqsubseteq \neg$ StormOverflow
 DischargeStructure $\sqsubseteq \neg$ TreatmentPlant
 Inlet $\sqsubseteq \neg$ TreatmentPlant
 Manhole $\sqsubseteq \neg$ TreatmentPlant
 PumpingStation $\sqsubseteq \neg$ TreatmentPlant
 RetentionBasin $\sqsubseteq \neg$ TreatmentPlant
 StormOverflow $\sqsubseteq \neg$ TreatmentPlant

ManholeCover

ManholeCover $\sqsubseteq \exists$ has-quality Diameter
 ManholeCover $\sqsubseteq \exists$ specific-constant-constituent Material
 ManholeCover \sqsubseteq NetworkElementPart

Masonry

Masonry \sqsubseteq Material
 Concrete $\sqsubseteq \neg$ Cement
 Glass $\sqsubseteq \neg$ Cement
 Masonry $\sqsubseteq \neg$ Cement
 Metallic $\sqsubseteq \neg$ Cement
 NaturalStone $\sqsubseteq \neg$ Cement

Plastic $\sqsubseteq \neg$ Cement
 Cement $\sqsubseteq \neg$ Concrete
 Glass $\sqsubseteq \neg$ Concrete
 Masonry $\sqsubseteq \neg$ Concrete
 Metallic $\sqsubseteq \neg$ Concrete
 NaturalStone $\sqsubseteq \neg$ Concrete
 Plastic $\sqsubseteq \neg$ Concrete
 Cement $\sqsubseteq \neg$ Glass
 Concrete $\sqsubseteq \neg$ Glass
 Masonry $\sqsubseteq \neg$ Glass
 Metallic $\sqsubseteq \neg$ Glass
 NaturalStone $\sqsubseteq \neg$ Glass
 Plastic $\sqsubseteq \neg$ Glass
 Masonry $\sqsubseteq \neg$ Cement
 Masonry $\sqsubseteq \neg$ Concrete
 Masonry $\sqsubseteq \neg$ Glass
 Masonry $\sqsubseteq \neg$ Metallic
 Masonry $\sqsubseteq \neg$ NaturalStone
 Masonry $\sqsubseteq \neg$ Plastic
 Cement $\sqsubseteq \neg$ Metallic
 Concrete $\sqsubseteq \neg$ Metallic
 Glass $\sqsubseteq \neg$ Metallic
 Masonry $\sqsubseteq \neg$ Metallic
 NaturalStone $\sqsubseteq \neg$ Metallic
 Plastic $\sqsubseteq \neg$ Metallic
 Cement $\sqsubseteq \neg$ NaturalStone
 Concrete $\sqsubseteq \neg$ NaturalStone
 Glass $\sqsubseteq \neg$ NaturalStone
 Masonry $\sqsubseteq \neg$ NaturalStone
 Metallic $\sqsubseteq \neg$ NaturalStone
 Plastic $\sqsubseteq \neg$ NaturalStone
 Cement $\sqsubseteq \neg$ Plastic
 Concrete $\sqsubseteq \neg$ Plastic
 Glass $\sqsubseteq \neg$ Plastic
 Masonry $\sqsubseteq \neg$ Plastic
 Metallic $\sqsubseteq \neg$ Plastic
 NaturalStone $\sqsubseteq \neg$ Plastic

Material

Material \sqsubseteq amount-of-matter
 Material $\sqsubseteq \exists$ specific-constant-constituent ManholeCover
 Material $\sqsubseteq \exists$ specific-constant-constituent Conduit

Metallic

Metallic \sqsubseteq Material
Concrete $\sqsubseteq \neg$ Cement
Glass $\sqsubseteq \neg$ Cement
Masonry $\sqsubseteq \neg$ Cement
Metallic $\sqsubseteq \neg$ Cement
NaturalStone $\sqsubseteq \neg$ Cement
Plastic $\sqsubseteq \neg$ Cement
Cement $\sqsubseteq \neg$ Concrete
Glass $\sqsubseteq \neg$ Concrete
Masonry $\sqsubseteq \neg$ Concrete
Metallic $\sqsubseteq \neg$ Concrete
NaturalStone $\sqsubseteq \neg$ Concrete
Plastic $\sqsubseteq \neg$ Concrete
Cement $\sqsubseteq \neg$ Glass
Concrete $\sqsubseteq \neg$ Glass
Masonry $\sqsubseteq \neg$ Glass
Metallic $\sqsubseteq \neg$ Glass
NaturalStone $\sqsubseteq \neg$ Glass
Plastic $\sqsubseteq \neg$ Glass
Cement $\sqsubseteq \neg$ Masonry
Concrete $\sqsubseteq \neg$ Masonry
Glass $\sqsubseteq \neg$ Masonry
Metallic $\sqsubseteq \neg$ Masonry
NaturalStone $\sqsubseteq \neg$ Masonry
Plastic $\sqsubseteq \neg$ Masonry
Metallic $\sqsubseteq \neg$ Cement
Metallic $\sqsubseteq \neg$ Concrete
Metallic $\sqsubseteq \neg$ Glass
Metallic $\sqsubseteq \neg$ Masonry
Metallic $\sqsubseteq \neg$ NaturalStone
Metallic $\sqsubseteq \neg$ Plastic
Cement $\sqsubseteq \neg$ NaturalStone
Concrete $\sqsubseteq \neg$ NaturalStone
Glass $\sqsubseteq \neg$ NaturalStone
Masonry $\sqsubseteq \neg$ NaturalStone
Metallic $\sqsubseteq \neg$ NaturalStone
Plastic $\sqsubseteq \neg$ NaturalStone
Cement $\sqsubseteq \neg$ Plastic
Concrete $\sqsubseteq \neg$ Plastic
Glass $\sqsubseteq \neg$ Plastic
Masonry $\sqsubseteq \neg$ Plastic
Metallic $\sqsubseteq \neg$ Plastic
NaturalStone $\sqsubseteq \neg$ Plastic

NaturalStone

NaturalStone \sqsubseteq Material
Concrete $\sqsubseteq \neg$ Cement
Glass $\sqsubseteq \neg$ Cement
Masonry $\sqsubseteq \neg$ Cement
Metallic $\sqsubseteq \neg$ Cement
NaturalStone $\sqsubseteq \neg$ Cement
Plastic $\sqsubseteq \neg$ Cement
Cement $\sqsubseteq \neg$ Concrete
Glass $\sqsubseteq \neg$ Concrete
Masonry $\sqsubseteq \neg$ Concrete
Metallic $\sqsubseteq \neg$ Concrete
NaturalStone $\sqsubseteq \neg$ Concrete
Plastic $\sqsubseteq \neg$ Concrete
Cement $\sqsubseteq \neg$ Glass
Concrete $\sqsubseteq \neg$ Glass
Masonry $\sqsubseteq \neg$ Glass
Metallic $\sqsubseteq \neg$ Glass
NaturalStone $\sqsubseteq \neg$ Glass
Plastic $\sqsubseteq \neg$ Glass
Cement $\sqsubseteq \neg$ Masonry
Concrete $\sqsubseteq \neg$ Masonry
Glass $\sqsubseteq \neg$ Masonry
Metallic $\sqsubseteq \neg$ Masonry
NaturalStone $\sqsubseteq \neg$ Masonry
Plastic $\sqsubseteq \neg$ Masonry
Cement $\sqsubseteq \neg$ Metallic
Concrete $\sqsubseteq \neg$ Metallic
Glass $\sqsubseteq \neg$ Metallic
Masonry $\sqsubseteq \neg$ Metallic
NaturalStone $\sqsubseteq \neg$ Metallic
Plastic $\sqsubseteq \neg$ Metallic
NaturalStone $\sqsubseteq \neg$ Cement
NaturalStone $\sqsubseteq \neg$ Concrete
NaturalStone $\sqsubseteq \neg$ Glass
NaturalStone $\sqsubseteq \neg$ Masonry
NaturalStone $\sqsubseteq \neg$ Metallic
NaturalStone $\sqsubseteq \neg$ Plastic
Cement $\sqsubseteq \neg$ Plastic
Concrete $\sqsubseteq \neg$ Plastic
Glass $\sqsubseteq \neg$ Plastic
Masonry $\sqsubseteq \neg$ Plastic
Metallic $\sqsubseteq \neg$ Plastic
NaturalStone $\sqsubseteq \neg$ Plastic

NetBreakage

NetBreakage \sqsubseteq ConduitDefect

Network

Network \sqsubseteq physical-object
Network $\sqsubseteq \exists$ participant-in Repair
Network $\sqsubseteq \exists$ part-of Network
Network $\sqsubseteq \exists$ assignedTo AttributeAuthor
Network $\sqsubseteq \exists$ part NetworkElement
Network $\sqsubseteq \exists$ assignedTo Operator
Network $\sqsubseteq \exists$ assignedTo ProjectOwner
Network $\sqsubseteq \exists$ participant-in Inspection
Network $\sqsubseteq \exists$ participant-in Incident
Network $\sqsubseteq \exists$ participant-in Maintenance
Network $\sqsubseteq \exists$ part NetworkElementPart

NetworkElement

NetworkElement $\sqsubseteq \exists$ part-of Network
NetworkElement $\sqsubseteq \exists$ assignedTo Operator
NetworkElement $\sqsubseteq \exists$ participant-in Repair
NetworkElement $\sqsubseteq \exists$ has-quality Geometry
NetworkElement $\sqsubseteq \exists$ participant-in Inspection
NetworkElement $\sqsubseteq \exists$ participant-in UtilityObjectStatus
NetworkElement \sqsubseteq physical-object
NetworkElement $\sqsubseteq \exists$ participant-in Maintenance
NetworkElement $\sqsubseteq \exists$ assignedTo AttributeAuthor
NetworkElement $\sqsubseteq \exists$ participant-in Geolocation
NetworkElement $\sqsubseteq \exists$ assignedTo ProjectOwner
NetworkElement $\sqsubseteq \exists$ participant-in Incident
NetworkElement $\sqsubseteq \exists$ part NetworkElementPart

NetworkElementPart

NetworkElementPart $\sqsubseteq \exists$ participant-in Maintenance
NetworkElementPart $\sqsubseteq \exists$ has-quality Elevation
NetworkElementPart $\sqsubseteq \exists$ participant-in Geolocation
NetworkElementPart $\sqsubseteq \exists$ assignedTo ProjectOwner
NetworkElementPart \sqsubseteq physical-object
NetworkElementPart $\sqsubseteq \exists$ participant-in Incident
NetworkElementPart $\sqsubseteq \exists$ part-of Network
NetworkElementPart $\sqsubseteq \exists$ part-of NetworkElement
NetworkElementPart $\sqsubseteq \exists$ participant-in Inspection
NetworkElementPart $\sqsubseteq \exists$ assignedTo Operator
NetworkElementPart $\sqsubseteq \exists$ participant-in UtilityObjectStatus

NetworkElementPart $\sqsubseteq \exists$ assignedTo AttributeAuthor
NetworkElementPart $\sqsubseteq \exists$ participant-in Repair

Node

Node $\sqsubseteq \exists$ has-quality Elevation
Node $\sqsubseteq \exists$ weakConnectionUpstream Conduit
Node $\sqsubseteq \exists$ weakConnectionDownstream Conduit
Node \sqsubseteq NetworkElement
Node $\sqsubseteq \exists$ weak-connection Conduit

Operator

Operator \sqsubseteq SocialObject

Pipe

Pipe \sqsubseteq Conduit

Plastic

Plastic \sqsubseteq Material
Concrete $\sqsubseteq \neg$ Cement
Glass $\sqsubseteq \neg$ Cement
Masonry $\sqsubseteq \neg$ Cement
Metallic $\sqsubseteq \neg$ Cement
NaturalStone $\sqsubseteq \neg$ Cement
Plastic $\sqsubseteq \neg$ Cement
Cement $\sqsubseteq \neg$ Concrete
Glass $\sqsubseteq \neg$ Concrete
Masonry $\sqsubseteq \neg$ Concrete
Metallic $\sqsubseteq \neg$ Concrete
NaturalStone $\sqsubseteq \neg$ Concrete
Plastic $\sqsubseteq \neg$ Concrete
Cement $\sqsubseteq \neg$ Glass
Concrete $\sqsubseteq \neg$ Glass
Masonry $\sqsubseteq \neg$ Glass
Metallic $\sqsubseteq \neg$ Glass
NaturalStone $\sqsubseteq \neg$ Glass
Plastic $\sqsubseteq \neg$ Glass
Cement $\sqsubseteq \neg$ Masonry
Concrete $\sqsubseteq \neg$ Masonry
Glass $\sqsubseteq \neg$ Masonry
Metallic $\sqsubseteq \neg$ Masonry
NaturalStone $\sqsubseteq \neg$ Masonry
Plastic $\sqsubseteq \neg$ Masonry
Cement $\sqsubseteq \neg$ Metallic

Concrete $\sqsubseteq \neg$ Metallic
Glass $\sqsubseteq \neg$ Metallic
Masonry $\sqsubseteq \neg$ Metallic
NaturalStone $\sqsubseteq \neg$ Metallic
Plastic $\sqsubseteq \neg$ Metallic
Cement $\sqsubseteq \neg$ NaturalStone
Concrete $\sqsubseteq \neg$ NaturalStone
Glass $\sqsubseteq \neg$ NaturalStone
Masonry $\sqsubseteq \neg$ NaturalStone
Metallic $\sqsubseteq \neg$ NaturalStone
Plastic $\sqsubseteq \neg$ NaturalStone
Plastic $\sqsubseteq \neg$ Cement
Plastic $\sqsubseteq \neg$ Concrete
Plastic $\sqsubseteq \neg$ Glass
Plastic $\sqsubseteq \neg$ Masonry
Plastic $\sqsubseteq \neg$ Metallic
Plastic $\sqsubseteq \neg$ NaturalStone

ProjectOwner

ProjectOwner \sqsubseteq SocialObject

Projected

Projected \sqsubseteq UtilityObjectStatus

ProperInterval

ProperInterval \sqsubseteq Interval
ProperInterval $\sqsubseteq \neg$ Instant

PumpingStation

PumpingStation $\sqsubseteq \exists$ has-quality Volume
PumpingStation \sqsubseteq Structure
Inlet $\sqsubseteq \neg$ DischargeStructure
Manhole $\sqsubseteq \neg$ DischargeStructure
PumpingStation $\sqsubseteq \neg$ DischargeStructure
RetentionBasin $\sqsubseteq \neg$ DischargeStructure
StormOverflow $\sqsubseteq \neg$ DischargeStructure
TreatmentPlant $\sqsubseteq \neg$ DischargeStructure
DischargeStructure $\sqsubseteq \neg$ Inlet
Manhole $\sqsubseteq \neg$ Inlet
PumpingStation $\sqsubseteq \neg$ Inlet
RetentionBasin $\sqsubseteq \neg$ Inlet
StormOverflow $\sqsubseteq \neg$ Inlet

TreatmentPlant $\sqsubseteq \neg$ Inlet
 DischargeStructure $\sqsubseteq \neg$ Manhole
 Inlet $\sqsubseteq \neg$ Manhole
 PumpingStation $\sqsubseteq \neg$ Manhole
 RetentionBasin $\sqsubseteq \neg$ Manhole
 StormOverflow $\sqsubseteq \neg$ Manhole
 TreatmentPlant $\sqsubseteq \neg$ Manhole
 PumpingStation $\sqsubseteq \neg$ DischargeStructure
 PumpingStation $\sqsubseteq \neg$ Inlet
 PumpingStation $\sqsubseteq \neg$ Manhole
 PumpingStation $\sqsubseteq \neg$ RetentionBasin
 PumpingStation $\sqsubseteq \neg$ StormOverflow
 PumpingStation $\sqsubseteq \neg$ TreatmentPlant
 DischargeStructure $\sqsubseteq \neg$ RetentionBasin
 Inlet $\sqsubseteq \neg$ RetentionBasin
 Manhole $\sqsubseteq \neg$ RetentionBasin
 PumpingStation $\sqsubseteq \neg$ RetentionBasin
 StormOverflow $\sqsubseteq \neg$ RetentionBasin
 TreatmentPlant $\sqsubseteq \neg$ RetentionBasin
 DischargeStructure $\sqsubseteq \neg$ StormOverflow
 Inlet $\sqsubseteq \neg$ StormOverflow
 Manhole $\sqsubseteq \neg$ StormOverflow
 PumpingStation $\sqsubseteq \neg$ StormOverflow
 RetentionBasin $\sqsubseteq \neg$ StormOverflow
 TreatmentPlant $\sqsubseteq \neg$ StormOverflow
 DischargeStructure $\sqsubseteq \neg$ TreatmentPlant
 Inlet $\sqsubseteq \neg$ TreatmentPlant
 Manhole $\sqsubseteq \neg$ TreatmentPlant
 PumpingStation $\sqsubseteq \neg$ TreatmentPlant
 RetentionBasin $\sqsubseteq \neg$ TreatmentPlant
 StormOverflow $\sqsubseteq \neg$ TreatmentPlant

ReclaimedWater

ReclaimedWater \sqsubseteq SewerWater

Repair

Repair \sqsubseteq achievement
 Repair $\sqsubseteq \exists$ participant (Operator \sqcup ProjectOwner)
 Repair $\sqsubseteq \exists$ participant NetworkElement
 Repair $\sqsubseteq \exists$ participant NetworkElementPart
 Repair $\sqsubseteq \exists$ hasTime TemporalEntity
 Repair $\sqsubseteq \exists$ participant ConduitDefect

RetentionBasin

RetentionBasin \sqsubseteq Structure
Inlet $\sqsubseteq \neg$ DischargeStructure
Manhole $\sqsubseteq \neg$ DischargeStructure
PumpingStation $\sqsubseteq \neg$ DischargeStructure
RetentionBasin $\sqsubseteq \neg$ DischargeStructure
StormOverflow $\sqsubseteq \neg$ DischargeStructure
TreatmentPlant $\sqsubseteq \neg$ DischargeStructure
DischargeStructure $\sqsubseteq \neg$ Inlet
Manhole $\sqsubseteq \neg$ Inlet
PumpingStation $\sqsubseteq \neg$ Inlet
RetentionBasin $\sqsubseteq \neg$ Inlet
StormOverflow $\sqsubseteq \neg$ Inlet
TreatmentPlant $\sqsubseteq \neg$ Inlet
DischargeStructure $\sqsubseteq \neg$ Manhole
Inlet $\sqsubseteq \neg$ Manhole
PumpingStation $\sqsubseteq \neg$ Manhole
RetentionBasin $\sqsubseteq \neg$ Manhole
StormOverflow $\sqsubseteq \neg$ Manhole
TreatmentPlant $\sqsubseteq \neg$ Manhole
DischargeStructure $\sqsubseteq \neg$ PumpingStation
Inlet $\sqsubseteq \neg$ PumpingStation
Manhole $\sqsubseteq \neg$ PumpingStation
RetentionBasin $\sqsubseteq \neg$ PumpingStation
StormOverflow $\sqsubseteq \neg$ PumpingStation
TreatmentPlant $\sqsubseteq \neg$ PumpingStation
RetentionBasin $\sqsubseteq \neg$ DischargeStructure
RetentionBasin $\sqsubseteq \neg$ Inlet
RetentionBasin $\sqsubseteq \neg$ Manhole
RetentionBasin $\sqsubseteq \neg$ PumpingStation
RetentionBasin $\sqsubseteq \neg$ StormOverflow
RetentionBasin $\sqsubseteq \neg$ TreatmentPlant
DischargeStructure $\sqsubseteq \neg$ StormOverflow
Inlet $\sqsubseteq \neg$ StormOverflow
Manhole $\sqsubseteq \neg$ StormOverflow
PumpingStation $\sqsubseteq \neg$ StormOverflow
RetentionBasin $\sqsubseteq \neg$ StormOverflow
TreatmentPlant $\sqsubseteq \neg$ StormOverflow
DischargeStructure $\sqsubseteq \neg$ TreatmentPlant
Inlet $\sqsubseteq \neg$ TreatmentPlant
Manhole $\sqsubseteq \neg$ TreatmentPlant
PumpingStation $\sqsubseteq \neg$ TreatmentPlant
RetentionBasin $\sqsubseteq \neg$ TreatmentPlant
StormOverflow $\sqsubseteq \neg$ TreatmentPlant

RimElevation

RimElevation \sqsubseteq Elevation

RimElevation $\sqsubseteq \exists$ inherent-in Manhole

SanitaryWastewater

SanitaryWastewater \sqsubseteq SewerWater

SewerWater

SewerWater $\sqsubseteq \exists$ generic-dependent ConduitCategory

SewerWater \sqsubseteq amount-of-matter

Shape

Shape $\sqsubseteq \exists$ inherent-in Conduit

Shape \sqsubseteq physical-quality

Slope

Slope $\sqsubseteq \exists$ inherent-in Conduit

Slope \sqsubseteq physical-quality

SocialObject

SocialObject \sqsubseteq non-physical-object

StormOverflow

StormOverflow \sqsubseteq Structure

Inlet $\sqsubseteq \neg$ DischargeStructure

Manhole $\sqsubseteq \neg$ DischargeStructure

PumpingStation $\sqsubseteq \neg$ DischargeStructure

RetentionBasin $\sqsubseteq \neg$ DischargeStructure

StormOverflow $\sqsubseteq \neg$ DischargeStructure

TreatmentPlant $\sqsubseteq \neg$ DischargeStructure

DischargeStructure $\sqsubseteq \neg$ Inlet

Manhole $\sqsubseteq \neg$ Inlet

PumpingStation $\sqsubseteq \neg$ Inlet

RetentionBasin $\sqsubseteq \neg$ Inlet

StormOverflow $\sqsubseteq \neg$ Inlet

TreatmentPlant $\sqsubseteq \neg$ Inlet

DischargeStructure $\sqsubseteq \neg$ Manhole

Inlet $\sqsubseteq \neg$ Manhole

PumpingStation $\sqsubseteq \neg$ Manhole

RetentionBasin $\sqsubseteq \neg$ Manhole

StormOverflow $\sqsubseteq \neg$ Manhole

TreatmentPlant $\sqsubseteq \neg$ Manhole
 DischargeStructure $\sqsubseteq \neg$ PumpingStation
 Inlet $\sqsubseteq \neg$ PumpingStation
 Manhole $\sqsubseteq \neg$ PumpingStation
 RetentionBasin $\sqsubseteq \neg$ PumpingStation
 StormOverflow $\sqsubseteq \neg$ PumpingStation
 TreatmentPlant $\sqsubseteq \neg$ PumpingStation
 DischargeStructure $\sqsubseteq \neg$ RetentionBasin
 Inlet $\sqsubseteq \neg$ RetentionBasin
 Manhole $\sqsubseteq \neg$ RetentionBasin
 PumpingStation $\sqsubseteq \neg$ RetentionBasin
 StormOverflow $\sqsubseteq \neg$ RetentionBasin
 TreatmentPlant $\sqsubseteq \neg$ RetentionBasin
 StormOverflow $\sqsubseteq \neg$ DischargeStructure
 StormOverflow $\sqsubseteq \neg$ Inlet
 StormOverflow $\sqsubseteq \neg$ Manhole
 StormOverflow $\sqsubseteq \neg$ PumpingStation
 StormOverflow $\sqsubseteq \neg$ RetentionBasin
 StormOverflow $\sqsubseteq \neg$ TreatmentPlant
 DischargeStructure $\sqsubseteq \neg$ TreatmentPlant
 Inlet $\sqsubseteq \neg$ TreatmentPlant
 Manhole $\sqsubseteq \neg$ TreatmentPlant
 PumpingStation $\sqsubseteq \neg$ TreatmentPlant
 RetentionBasin $\sqsubseteq \neg$ TreatmentPlant
 StormOverflow $\sqsubseteq \neg$ TreatmentPlant

StormwaterConduit

StormwaterConduit \sqsubseteq ConduitCategory
 StormwaterConduit $\sqsubseteq \neg$ CombinedConduit
 WastewaterConduit $\sqsubseteq \neg$ CombinedConduit
 StormwaterConduit $\sqsubseteq \neg$ CombinedConduit
 StormwaterConduit $\sqsubseteq \neg$ WastewaterConduit
 CombinedConduit $\sqsubseteq \neg$ WastewaterConduit
 StormwaterConduit $\sqsubseteq \neg$ WastewaterConduit

StormwaterNetwork

StormwaterNetwork \sqsubseteq Network
 StormwaterNetwork $\sqsubseteq \neg$ CombinedNetwork
 WastewaterNetwork $\sqsubseteq \neg$ CombinedNetwork
 StormwaterNetwork $\sqsubseteq \neg$ CombinedNetwork
 StormwaterNetwork $\sqsubseteq \neg$ WastewaterNetwork
 CombinedNetwork $\sqsubseteq \neg$ WastewaterNetwork

StormwaterNetwork \sqsubseteq \neg WastewaterNetwork

StormwaterRunoff

StormwaterRunoff \sqsubseteq SewerWater

Structure

Structure \sqsubseteq Node

TemporalDuration

TemporalEntity

TemporalEntity \equiv Instant \sqcup Interval

TemporalEntity \sqsubseteq Thing

TemporalEntity \sqsubseteq \exists hasTemporalDuration TemporalDuration

TemporalUnit

TemporalUnit \sqsubseteq TemporalDuration

Thing

Transport

Transport \sqsubseteq ConduitFunction

Transport \sqsubseteq \neg Collection

TreatmentPlant

TreatmentPlant \sqsubseteq Structure

TreatmentPlant \sqsubseteq \exists has-quality Volume

Inlet \sqsubseteq \neg DischargeStructure

Manhole \sqsubseteq \neg DischargeStructure

PumpingStation \sqsubseteq \neg DischargeStructure

RetentionBasin \sqsubseteq \neg DischargeStructure

StormOverflow \sqsubseteq \neg DischargeStructure

TreatmentPlant \sqsubseteq \neg DischargeStructure

DischargeStructure \sqsubseteq \neg Inlet

Manhole \sqsubseteq \neg Inlet

PumpingStation \sqsubseteq \neg Inlet

RetentionBasin \sqsubseteq \neg Inlet

StormOverflow \sqsubseteq \neg Inlet

TreatmentPlant \sqsubseteq \neg Inlet

DischargeStructure \sqsubseteq \neg Manhole

Inlet \sqsubseteq \neg Manhole

PumpingStation $\sqsubseteq \neg$ Manhole
 RetentionBasin $\sqsubseteq \neg$ Manhole
 StormOverflow $\sqsubseteq \neg$ Manhole
 TreatmentPlant $\sqsubseteq \neg$ Manhole
 DischargeStructure $\sqsubseteq \neg$ PumpingStation
 Inlet $\sqsubseteq \neg$ PumpingStation
 Manhole $\sqsubseteq \neg$ PumpingStation
 RetentionBasin $\sqsubseteq \neg$ PumpingStation
 StormOverflow $\sqsubseteq \neg$ PumpingStation
 TreatmentPlant $\sqsubseteq \neg$ PumpingStation
 DischargeStructure $\sqsubseteq \neg$ RetentionBasin
 Inlet $\sqsubseteq \neg$ RetentionBasin
 Manhole $\sqsubseteq \neg$ RetentionBasin
 PumpingStation $\sqsubseteq \neg$ RetentionBasin
 StormOverflow $\sqsubseteq \neg$ RetentionBasin
 TreatmentPlant $\sqsubseteq \neg$ RetentionBasin
 DischargeStructure $\sqsubseteq \neg$ StormOverflow
 Inlet $\sqsubseteq \neg$ StormOverflow
 Manhole $\sqsubseteq \neg$ StormOverflow
 PumpingStation $\sqsubseteq \neg$ StormOverflow
 RetentionBasin $\sqsubseteq \neg$ StormOverflow
 TreatmentPlant $\sqsubseteq \neg$ StormOverflow
 TreatmentPlant $\sqsubseteq \neg$ DischargeStructure
 TreatmentPlant $\sqsubseteq \neg$ Inlet
 TreatmentPlant $\sqsubseteq \neg$ Manhole
 TreatmentPlant $\sqsubseteq \neg$ PumpingStation
 TreatmentPlant $\sqsubseteq \neg$ RetentionBasin
 TreatmentPlant $\sqsubseteq \neg$ StormOverflow

UnderConstruction

UnderConstruction \sqsubseteq UtilityObjectStatus

UpstreamConduitExtremity

UpstreamConduitExtremity \sqsubseteq ConduitPoint

UtilityObjectStatus

UtilityObjectStatus \sqsubseteq state
 UtilityObjectStatus $\sqsubseteq \exists$ participant NetworkElementPart
 UtilityObjectStatus $\sqsubseteq \exists$ participant NetworkElement

Vacuum

Vacuum \sqsubseteq ConduitCirculationMode

Gravity $\sqsubseteq \neg$ ForceMain
Vacuum $\sqsubseteq \neg$ ForceMain
ForceMain $\sqsubseteq \neg$ Gravity
Vacuum $\sqsubseteq \neg$ Gravity
Vacuum $\sqsubseteq \neg$ ForceMain
Vacuum $\sqsubseteq \neg$ Gravity

Valve

Valve \sqsubseteq Apparatus
ConnectionPoint $\sqsubseteq \neg$ AirValve
Flowmeter $\sqsubseteq \neg$ AirValve
Valve $\sqsubseteq \neg$ AirValve
AirValve $\sqsubseteq \neg$ ConnectionPoint
Flowmeter $\sqsubseteq \neg$ ConnectionPoint
Valve $\sqsubseteq \neg$ ConnectionPoint
AirValve $\sqsubseteq \neg$ Flowmeter
ConnectionPoint $\sqsubseteq \neg$ Flowmeter
Valve $\sqsubseteq \neg$ Flowmeter
Valve $\sqsubseteq \neg$ AirValve
Valve $\sqsubseteq \neg$ ConnectionPoint
Valve $\sqsubseteq \neg$ Flowmeter

Volume

Volume $\sqsubseteq \exists$ inherent-in PumpingStation
Volume \sqsubseteq physical-quality
Volume $\sqsubseteq \exists$ inherent-in TreatmentPlant

WastewaterConduit

WastewaterConduit \sqsubseteq ConduitCategory
StormwaterConduit $\sqsubseteq \neg$ CombinedConduit
WastewaterConduit $\sqsubseteq \neg$ CombinedConduit
CombinedConduit $\sqsubseteq \neg$ StormwaterConduit
WastewaterConduit $\sqsubseteq \neg$ StormwaterConduit
WastewaterConduit $\sqsubseteq \neg$ CombinedConduit
WastewaterConduit $\sqsubseteq \neg$ StormwaterConduit

WastewaterNetwork

WastewaterNetwork \sqsubseteq Network
StormwaterNetwork $\sqsubseteq \neg$ CombinedNetwork
WastewaterNetwork $\sqsubseteq \neg$ CombinedNetwork

CombinedNetwork $\sqsubseteq \neg$ StormwaterNetwork
WastewaterNetwork $\sqsubseteq \neg$ StormwaterNetwork
WastewaterNetwork $\sqsubseteq \neg$ CombinedNetwork
WastewaterNetwork $\sqsubseteq \neg$ StormwaterNetwork

XCoordinate

XCoordinate \sqsubseteq Coordinate

YCoordinate

YCoordinate \sqsubseteq Coordinate

Year

Year \sqsubseteq DurationDescription

accomplishment

achievement

amount-of-matter

feature

non-physical-object

physical-object

physical-quality

quality

space-region

spatial-location_q

state

temporal-quality

Object properties

assignedTo

\exists assignedTo Thing \sqsubseteq physical-object

$\top \sqsubseteq \forall$ assignedTo non-physical-object

generic-dependent

generically-dependent-on

has-quality

hasBearer

$\exists \text{ hasBearer } \text{Thing} \sqsubseteq \text{non-physical-object}$
 $\top \sqsubseteq \forall \text{ hasBearer } \text{physical-object}$

hasBeginning

$\sqsubseteq \text{hasTime}$
 $\exists \text{ hasBeginning } \text{Thing} \sqsubseteq \text{TemporalEntity}$
 $\top \sqsubseteq \forall \text{ hasBeginning } \text{Instant}$

hasDuration

$\sqsubseteq \text{hasTemporalDuration}$
 $\top \sqsubseteq \forall \text{ hasDuration } \text{Duration}$

hasDurationDescription

$\sqsubseteq \text{hasTemporalDuration}$
 $\top \sqsubseteq \forall \text{ hasDurationDescription } \text{GeneralDurationDescription}$

hasEnd

$\sqsubseteq \text{hasTime}$
 $\exists \text{ hasEnd } \text{Thing} \sqsubseteq \text{TemporalEntity}$
 $\top \sqsubseteq \forall \text{ hasEnd } \text{Instant}$

hasTemporalDuration

$\exists \text{ hasTemporalDuration } \text{Thing} \sqsubseteq \text{TemporalEntity}$
 $\top \sqsubseteq \forall \text{ hasTemporalDuration } \text{TemporalDuration}$

hasTime

$\top \sqsubseteq \forall \text{ hasTime } \text{TemporalEntity}$

inherent-in

part

part-of

participant

participant-in

q-location

q-location-of

specific-constant-constituent

weak-connection

$\text{weak-connection} \equiv \text{weak-connection}^-$

weakConnectionDownstream

$\sqsubseteq \text{weak-connection}$

$\exists \text{weakConnectionDownstream Thing} \sqsubseteq \text{physical-object}$

$\top \sqsubseteq \forall \text{weakConnectionDownstream physical-object}$

weakConnectionUpstream

$\sqsubseteq \text{weak-connection}$

$\exists \text{weakConnectionUpstream Thing} \sqsubseteq \text{physical-object}$

$\top \sqsubseteq \forall \text{weakConnectionUpstream physical-object}$

Data properties

Individuals

unitDay

$\text{unitDay} : \text{TemporalUnit}$

unitHour

$\text{unitHour} : \text{TemporalUnit}$

unitMinute

$\text{unitMinute} : \text{TemporalUnit}$

unitMonth

$\text{unitMonth} : \text{TemporalUnit}$

unitSecond

unitSecond : TemporalUnit

unitWeek

unitWeek : TemporalUnit

unitYear

unitYear : TemporalUnit

Datatypes

PlainLiteral

date

wktLiteral