

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

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 $\sqsubseteq \exists$ generic-dependent ConduitFunction
 Conduit $\sqsubseteq \exists$ has-quality Shape
 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 $\sqsubseteq \exists$ weak-connection Node
 Conduit $\sqsubseteq \exists$ has-quality Diameter

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

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 PipelineDefect

DateTimeInterval

DateTimeInterval \sqsubseteq ProperInterval

Decommissioned

Decommissioned \sqsubseteq UtilityObjectStatus

DefectiveJoint

DefectiveJoint \sqsubseteq PipelineDefect

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 PipelineDefect

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 $\sqsubseteq \neg$ Vaccum
ForceMain $\sqsubseteq \neg$ Gravity
Vaccum $\sqsubseteq \neg$ Gravity
ForceMain $\sqsubseteq \neg$ Vaccum
Gravity $\sqsubseteq \neg$ Vaccum

Functional

Functional \sqsubseteq UtilityObjectStatus

GeneralDurationDescription

GeneralDurationDescription \sqsubseteq TemporalDuration

Geolocation

Geolocation $\sqsubseteq \exists$ participant NetworkElementPart
Geolocation $\sqsubseteq \exists$ participant NetworkElement
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
Vaccum $\sqsubseteq \neg$ ForceMain
Gravity $\sqsubseteq \neg$ ForceMain
Gravity $\sqsubseteq \neg$ Vaccum
ForceMain $\sqsubseteq \neg$ Vaccum
Gravity $\sqsubseteq \neg$ Vaccum

Hole

Hole \sqsubseteq PipelineDefect

Incident

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

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 PipelineDefect

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 PipelineDefect

Network

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

PipelineDefect

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

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 PipelineDefect
 Repair $\sqsubseteq \exists$ participant (Operator \sqcup ProjectOwner)
 Repair $\sqsubseteq \exists$ participant NetworkElement

Repair $\sqsubseteq \exists$ participant NetworkElementPart
Repair $\sqsubseteq \exists$ hasTime TemporalEntity

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 amount-of-matter
SewerWater $\sqsubseteq \exists$ generic-dependent ConduitCategory

Shape

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

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

Vaccum

Vaccum \sqsubseteq ConduitCirculationMode
Gravity $\sqsubseteq \neg$ ForceMain
Vaccum $\sqsubseteq \neg$ ForceMain
ForceMain $\sqsubseteq \neg$ Gravity
Vaccum $\sqsubseteq \neg$ Gravity
Vaccum $\sqsubseteq \neg$ ForceMain
Vaccum $\sqsubseteq \neg$ 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

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

hasBeginning

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

hasDuration

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

hasDurationDescription

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

hasEnd

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

hasTemporalDuration

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

hasTime

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

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 weak-connection

\exists weakConnectionDownstream Thing \sqsubseteq physical-object

$\top \sqsubseteq \forall$ weakConnectionDownstream physical-object

weakConnectionUpstream

\sqsubseteq weak-connection

\exists weakConnectionUpstream Thing \sqsubseteq physical-object

$\top \sqsubseteq \forall$ weakConnectionUpstream physical-object

Data properties

Individuals

unitDay

unitDay : TemporalUnit

unitHour

unitHour : TemporalUnit

unitMinute

unitMinute : TemporalUnit

unitMonth

unitMonth : TemporalUnit

unitSecond

unitSecond : TemporalUnit

unitWeek

unitWeek : TemporalUnit

unitYear

unitYear : TemporalUnit

Datatypes

PlainLiteral

date

wktLiteral