

IFC FORMAT

IFC Tables A, B, and C are intended to direct the reader to the most relevant pages of the IFC4.3 documentation:

<http://ifc43-docs.standards.buildingsmart.org/>

The COBie3 MVD and IDS contain the formal definitions.

IFC Table A – Mapping Between COBie V3 Tables and IFC Entities

* Indicates an abstract entity where only its subtypes are used

#	TABLE	IFC4.3	NOTES
1	Instruction	IfcProject, IfcUnitAssignment	See IFC Table B
2	Company	IfcOrganization	
3	Facility	IfcProject IfcSite IfcFacility, IfcBuilding, IfcBridge IfcRail, IfcRoad, IfcTunnel (IFC4.4)	(ifc2x3: IfcBuilding)
4	Level	IfcFacilityPart, IfcBuildingStorey	(ifc2x3: IfcBuildingStorey)
5	SpaceType	IfcSpaceType	
6	Space	IfcSpace, IfcExternalSpatialElement	(ifc2x3: IfcSpace)
7	Zone	IfcZone	
8	Type	IfcElementType*	See IFC Table C
9	Component	IfcElement*	See IFC Table C

#	TABLE	IFC4.3	NOTES
10	System	IfcSystem, IfcCircuit, IfcBuildingSystem, IfcStructuralSystem, IfcDistributionSystem	
11	Resource	IfcConstructionEquipmentResourceType IfcConstructionMaterialResourceType IfcConstructionProductResourceType	
12	Job	IfcTaskType	(Ifc2x3: IfcTask)
13	Event	IfcTask	
14	Package	IfcWorkPlan	
15	Risk	Pset_Risk	
16	Document	IfcDocumentInformation	
17	Attribute	IfcPropertyValue*	
18	Coordinate	IfcLocalPlacement	
19	PickList	IfcClassification	classification hierarchy

IFC Table B – Mapping Between COBie V3 Fields and IFC Properties, Attributes, and Relationships
Relationships are listed right-justified.

FIELD	IFC	NOTES (SEE IFC TABLE A)
Address	Pset_Address.AddressLines*	Facility
AllowedValues	EnumerationValues	Attribute
ApprovalBy	IfcResourceApprovalRelationship	Document
AreaMeasurementStandard	MethodOfMeasurement	Instruction
AreaUnit	Units	Instruction
AssetIdentifier	AssetIdentifier	Component
AssetType	AssetAccountingType	Type
BarCode	BarCode	Component
Category	IfcClassificationReference RiskType	Company, Facility, Level, SpaceType, Zone, Type, System, Resource, Job, Event, Package, Document, Attribute, Coordinate. Risk
Certifications	Roles*	Company
ClassificationSystem.Company	IfcClassification.Name	Instruction

FIELD	IFC	NOTES (SEE IFC TABLE A)
ClassificationSystem.Facility	IfcClassification.Name	Instruction
ClassificationSystem.SpaceType	IfcClassification.Name	Instruction
ClassificationSystem.System	IfcClassification.Name	Instruction
ClassificationSystem.Type	IfcClassification.Name	Instruction
ClockwiseRotation	RelativePlacement	Coordinate
Company.Category	(see IFC Table A)	PickList
Company.Name	IfcRelAssignsToActor	Event, Package, Risk
Component.Name	IfcRelAssignsToGroup	System
Consequence	MitigatedRiskConsequence	Risk
Coordinate.Category	(see IFC Table A)	PickList
Coordinate.TableName	(see IFC Table A)	PickList
CoordinateSystemDescription		Instruction
CoordinateSystemOrigin		Instruction
CoordinateXAxis	RelativePlacement	Coordinate

FIELD	IFC	NOTES (SEE IFC TABLE A)
CoordinateYAxis	RelativePlacement	Coordinate
CoordinateZAxis	RelativePlacement	Coordinate
Country	Pset_Address.Country	Company
CurrencyUnit	Units	Instruction
Department	IfcOrganizationRelationship	Company
Description	Description Pset_Risk.NatureOfRisk	Space, Type, Component, Job, Event, Package, Facility, Level, SpaceType, Zone, System, Resource, Document, Attribute. Risk
Document.ApprovalBy	(see IFC Table A)	PickList
Document.Category	(see IFC Table A)	PickList
Document.Stage	(see IFC Table A)	PickList
Duration	TaskTime	Job
DurationUnit	IfcUnitAssignment	Instruction, Job
Elevation	IfcBuilding.Elevation IfcBuildingStorey.Elevation	Facility Level

FIELD	IFC	NOTES (SEE IFC TABLE A)
ElevationalRotation	RelativePlacement	Coordinate
EndDate	IfcTaskTime	Event, Package
Event.Category	(see IFC Table A)	PickList
Event.Name	IfcRelAssignsToControl	Package
ExportDateTime	IfcOwnerHistory.ModifiedDate	Instruction
ExtIdentifier	GlobalId	<i>All but Instruction and PickList</i>
ExtObject	(derived using IFC table A)	<i>All but Instruction and PickList</i>
ExtSystem	IfcApplication.Identifier	<i>All but Instruction and PickList</i>
File	Location	Document
Facility.Category	(see IFC Table A)	PickList
Facility.Type	(see IFC Table A)	PickList
GrossArea	GrossFloorArea	Space
Height	GrossHeight	Level
InstallationDate	InstallationDate	Component

FIELD	IFC	NOTES (SEE IFC TABLE A)
Interval	TaskTime	Job
IntervalUnit	IfcUnitAssignment	Job
Job.Category	(see IFC Table A)	PickList
Job.Name	IfcRelDefinesByType	Event
Job.Status	(see IFC Table A)	PickList
Latitude	Latitude	Facility
Level.Category	(see IFC Table A)	PickList
Level.Name	IfcRelDecomposes	Space
LevelOfRisk	MitigatedRiskSignificance	Risk
Likelihood	MitigatedRiskLikelihood	Risk
LinearUnit	Units	Instruction
Longitude	Longitude	Facility
Manufacturer	Manufacturer	Type
Milestone	Phase	Instruction

FIELD	IFC	NOTES (SEE IFC TABLE A)
Mitigation	MitigationPlanned	Risk
ModelNumber	ModelLabel	Type
ModelReference	ModelReference	Type
Name	Name RiskName	All but Instruction, PickList and Risk Risk
NetArea	NetFloorArea	Space
NominalHeight	NominalHeight	Type
NominalLength	NominalLength	Type
NominalWeight	Weight	Type
NominalWidth	NominalWidth	Type
OrganizationCode	Identification	Company
OriginatingCompany	IfcOwnerHistory.OwningUser	Instruction
PartOf	IfcRelDecomposes	Level, Space, Zone, System, Job
Path	Location	Document

FIELD	IFC	NOTES (SEE IFC TABLE A)
Phone	Pset_Address.TelephoneNumbers*	Company
PhysicalTable	(derived using IFC table A)	Risk
PhysicalTable.Name	AssociatedProduct	Risk
PostalBox	Pset_Address.PostalBox	Company
PostalCode	Pset_Address.PostalCode	Company
Priors	IfcRelSequence	Job
ProcessTable	(derived using IFC table A)	Risk
ProcessTable.Name	AssociatedActivity	Risk
PurchaseCost	Pset_Asset.OriginalCost	Type
Reference	Name	Document
Region	Pset_Address.Region	Instruction
RelativeTo	PlacementRelTo	Coordinate
Release	(not mapped)	Instruction
Resource.Category	(see IFC Table A)	PickList

FIELD	IFC	NOTES (SEE IFC TABLE A)
Resource.Names	IfcRelAssignsToResource	Job
Risk.Category	(see IFC Table A)	PickList
Risk.Consequence	(see IFC Table A)	PickList
Risk.LevelOfRisk	(see IFC Table A)	PickList
Risk.Likelihood	(see IFC Table A)	PickList
RoomTag	LongName	Space
SerialNumber	Pset_ManufacturerOccurrence.SerialNumber	Component
Space.Name	IfcRelAssignsToGroup	Component, Zone
Space.SecondaryName	LongName	Component
SpaceType.Category	(see IFC Table A)	PickList
SpaceType.Name	IfcRelDefinedByType	Space
SpatialTable	(derived using IFC table A)	Risk
SpatialTable.Name	AssociatedLocation	Risk
Stage	Purpose	Document

FIELD	IFC	NOTES (SEE IFC TABLE A)
StartDate	IfcTaskTime	Event, Package
StateRegion	Pset_Address.Region	Company
Status	(not mapped) Status	Instruction, Job
Street	Pset_Address.AddressLines*	Company
System.Category	(see IFC Table A)	PickList
Table	(derived using IFC table A)	Job, Event, Document, Attribute, Coordinate, PickList
Table.Name	(derived)	Job, Event, Document, Attribute, Coordinate
TagNumber	Pset_ConstructionOccurence.TagNumber	Component
TaskNumber	Identification	Job
Title	(not mapped)	Instruction
Town	Pset_Address.Town	Company
Type	(derived from IFC entity)	Facility
Type.AssetType	(see IFC Table A)	PickList

FIELD	IFC	NOTES (SEE IFC TABLE A)
Type.Category	(see IFC Table A)	PickList
Type.Name	IfcRelDefinesByType	Component
Unit	Unit	Attribute
Units.Area	(see IFC Table A)	PickList
Units.Currency	(see IFC Table A)	PickList
Units.Duration	(see IFC Table A)	PickList
Units.Linear	(see IFC Table A)	PickList
Units.Volume	(see IFC Table A)	PickList
Units.Weight	(see IFC Table A)	PickList
UsableHeight	(see IFC Table A)	Space
Value	NominalValue	Attribute
Version	(not mapped)	Instruction
VolumeUnit	Units	Instruction
WarrantyDescription	Pset_Warranty	Type

FIELD	IFC	NOTES (SEE IFC TABLE A)
WarrantyDurationLabor	Pset_Warranty	Type
WarrantyDurationParts	Pset_Warranty	Type
WarrantyDurationUnit	Pset_Warranty	Type
WarrantyGuarantorLabor	Pset_Warranty	Type
WarrantyGuarantorParts	Pset_Warranty	Type
WarrantyStartDate	Pset_Warranty	Component
Website	Pset_Address.WWWHomePageURL	Company
WeightUnit	Units	Instruction
YawRotation	RelativePlacement	Coordinate
Zone.Category	(see IFC Table A)	PickList

IFC Table C – Expected IFC Subtypes for COBie V3 Type and Component Tables

It is up to the owner to put in the contract the list of maintainable assets. Typically, the following list is used. Refer to table 8 Type and Table 9 Component.

EXTENSION / ELEMENTS / DOMAIN	IFC...(TYPE)
Product Extension	Impact Protection Device Transport Element
Shared Bldg. Elements	Door Window
Shared Bldg. Service Elements	Distribution Chamber Element Energy Conversion Device Flow Controller Flow Moving Device Flow Storage Device Flow Terminal
Shared Infrastructure Elements	Sign Signal
Building Controls Domain	Actuator Alarm Controller Flow Instrument Sensor Unitary Control Element
Electrical Domain	Audio Visual Appliance Communications Appliance Distribution Board Electric Appliance Electric Flow Storage Device Electric Flow Treatment Device Electric Generator Electric Motor Electric Time Control

EXTENSION / ELEMENTS / DOMAIN	IFC...(TYPE)
	Light Fixture Mobile Telecommunications Appliance Protective Device Tripping Unit Solar Device Switching Device Transformer
HVAC Domain	Air Terminal Air Terminal Box Air To Air Heat Recovery Boiler Burner Chiller Coil Compressor Condenser Damper Duct Silencer Engine Evaporative Cooler Fan Filter Flow Meter Heat Exchanger Humidifier Medical device Pump Space Heater Tank Unitary Equipment Valve
Plumbing Fire Protection Domain	Fire Suppression Terminal Interceptor Sanitary Terminal Waste Terminal

EXTENSION / ELEMENTS / DOMAIN	IFC...(TYPE)
Ports and Waterways Domain	Conveyor Segment Liquid Terminal Mooring Device Navigation Element
Rail Domain	Rail Track Element
Tunnel Domain	(IFC4.4)

SPREADSHEETML FORMAT

ISO/IEC 29500-1:2016

SpreadsheetML is an XML schema reflecting the organization of spreadsheet data in Microsoft Excel. The use of SpreadsheetML format for COBie data is optional in this specification. The SpreadsheetML format represents COBie data in an easy to understand and digest format (human readable).

More information on the SpreadsheetML schema can be found here:

<https://learn.microsoft.com/en-us/office/open-xml/structure-of-a-spreadsheetml-document>

An example blank spreadsheet is included as part of this standard.