

# Pile cap

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A footing is a part of the foundation of a structure that spreads and transmits the load to the soil. A footing is also characterized as shallow foundation, where the loads are transferred to the ground near the surface.

A pile cap is a footing element that transfers the load from a column or group of columns to a pier or pile or group of piers or piles.

IfcElementType	IfcFooting	=IfcExportAs
IfcPredefinedType	PILE_CAP	=IfcExportType
Suggested Filename:	Footing_PileCap	
Suggested LOD (Design Model)	300	
Suggested Primary Discipline	Structural	

## Source

## Property Categories

## Classification

BIM Forum	Admin data	Masterformat	31 60 00 : Special Foundations and Load-Bearing Elements
COBie	Construction logistics data		
IFC 2x3	Cost data	NatspecWorksection	0310 Concrete – combined
IFC4 Add2	Facilities management data	Omniclass Table 21 Elements	21-01 10 20 70 : Pile Caps
NATSPEC BIM	Geometric data		
NATSPEC Spec	Manufacturer data	Omniclass Table 22 Work Results	22-31 60 00 : Special Foundations and Load-Bearing Elements
	Performance data		
	Scheduling data	Omniclass Table 23 Products	23-13 29 11 11 21 : Pile Caps
	Spatial and location data		
	Specification data	Uniclass Elements	EF_20_05 : Substructure
	Sustainability data	Uniclass Products	Pr_20_85_62_19 : Concrete pile caps
		Uniclass Systems	Ss_20_05_65 : Piling systems
		Uniformat	A1020.70 : Pile Caps

Property	Source	Description
Admin data		
CreatedBy	NATSPEC BIM	The name of the person, organisation or library provider that created the object.
CreatedByURL	NATSPEC BIM	URL hyperlink to the object creator's website.
ModifiedIssue	NATSPEC BIM	To record the last date of issue (version or revision) of the object within an object library. Add the date in the following format <yyyymmdd.no> where the 'no' suffix is equal to the number of times the object has been issued on that date. For example 20180316.01.
Reference	PSet_FootingCommon (IFC4)	Reference ID for a specified type in a project (e.g. type 'A-1'). Also known as Construction type. Provide as an alternative to the name of the object type, if software does not support object types.
Construction logistics data		
ConstructionMethod	NATSPEC BIM	
GrossWeight	Qto_FootingBaseQuantities (IFC4) NATSPEC BIM	
NetWeight	Qto_FootingBaseQuantities (IFC4)	Takes all openings or recesses into account.
Status	PSet_FootingCommon (IFC4)	Status of the object, predominately used in renovation or retrofitting projects. <b>Complete value with:</b> NEW, EXISTING, DEMOLISH, TEMPORARY, OTHER, NOTKNOWN or UNSET
Cost data		
AdditionalTax	NATSPEC BIM	
AssemblyCost	NATSPEC BIM	

AssetAccountingType	Pset_Asset (IFC4) Pset_Asset (IFC2x3)	Asset type for accounting purposes. <b>Complete value with:</b> FIXED, NONFIXED, OTHER, NOTKNOWN or UNSET (PEnum_AssetAccountingType)
AssetInsuranceType	Pset_Asset (IFC4) Pset_Asset (IFC2x3)	Type of insurance rating. <b>Complete value with:</b> PERSONAL, REAL, OTHER, NOTKNOWN or UNSET (PEnum_AssetInsuranceType)
AssetTaxType	Pset_Asset (IFC4) Pset_Asset (IFC2x3)	Type of taxation group. <b>Complete value with:</b> CAPITALISED, EXPENDED, OTHER, NOTKNOWN or UNSET (PEnum_AssetTaxType)
ConceptualCost	NATSPEC BIM	
CostOverRun	NATSPEC BIM	
FutureCostAssumptions	NATSPEC BIM	
InstallationCost	NATSPEC BIM	
InstalledCost	NATSPEC BIM	
PurchaseInformation	NATSPEC BIM	
RecordedActualCost	NATSPEC BIM	
TotalOwnershipCost	NATSPEC BIM	
Facilities management data		
AccessibilityPerformance	COBie_ElementType COBie_Specification	Accessibility issue(s) that product satisfies.
AcquisitionDate	Pset_ManufacturerOccurrence (IFC4) Pset_ManufacturerOccurrence (IFC2x3)	Date the item was purchased (Format: YYYY-MM-DD).
AssessmentCondition	NATSPEC BIM Pset_Condition (IFC4)	Overall condition rating based on assessment. Rating scale to be agreed prior (e.g. Good, OK , Poor).
AssessmentDate	Pset_Condition (IFC4)	Date of overall condition assessment (Format: YYYY-MM-DD).

AssessmentDescription	Pset_Condition (IFC4)	Qualitative description of the condition.
AssetIdentifier	COBie_Component	Alternative identifier for specific component, used as defined by contract.
AssetType	COBie_AssetCOBie_ElementType	<b>Complete value with:</b> 'Fixed' or 'Movable'
Category	COBie	Classification code.
CodePerformance	COBie_ElementTypeCOBie_Specification	Code compliance requirement(s) that product satisfies.
ComponentID	NATSPEC BIM	
Constituents	COBie_ElementTypeCOBie_Specification	Details of various parts of the object.
Description	COBie	Concise description of the object.
DurationUnit	COBie	Units used to record expected life duration. Typically 'year'.
Exclusions	Pset_Warranty (IFC4)Pset_Warranty (IFC2x3)	Items, conditions or actions that may be excluded from the warranty or that may cause the warranty to become void.
ExpectedLife	NATSPEC BIMCOBie	Expected serviceable life of object.
Features	COBie_ElementTypeCOBie_Specification	Primary features or important characteristics of the product.
Grade	COBie_ElementTypeCOBie_Specification	Standard grading(s) to which the product corresponds.
InstallationDate	NATSPEC BIMCOBie_Component	Format: YYYY-MM-DD.
IsExtendedWarranty	Pset_Warranty (IFC4)Pset_Warranty (IFC2x3)	<b>Complete value with:</b> TRUE or FALSE (IfcBoolean)
ModelNumber	COBie	Model number or designator of the product model (or product line) as assigned by the manufacturer.
Name	COBie	Unique human readable name for object type.

ReplacementCost	NATSPEC BIM COBie_EconomicImpactValues COBie_ElementType	Cost to replace product.
Shape	COBie_ElementTypeCOBie_Specification	Characteristic shape of the object. e.g. Square.
SustainabilityPerformance	COBie_ElementTypeCOBie_Specification	Sustainability issue(s) that product satisfies.
TagNumber	COBie_Component	Tag number for product or equipment at installation.
WarrantyContent	NATSPEC BIMPset_Warranty (IFC4) Pset_Warranty (IFC2x3)	Description of what is included in warranty.
WarrantyDescription	COBie_Warranty	Concise description of warranty content and any items, conditions or actions that are excluded from warranty or that will cause the warranty to become void.
WarrantyDurationLabor	COBie_Warranty	Duration of labour warranty.
WarrantyDurationParts	COBie_Warranty	Duration of parts warranty.
WarrantyDurationUnit	COBie	Units used to record warranty durations. Typically 'year'.
WarrantyEndDate	NATSPEC BIMPset_Warranty (IFC4) Pset_Warranty (IFC2x3)	Format: YYYY-MM-DD.
WarrantyGuarantorLabor	COBie_Warranty	email address for organisation responsible for labour warranty.
WarrantyGuarantorParts	COBie_Warranty	email address for organisation responsible for parts warranty.
WarrantyIdentifier	Pset_Warranty (IFC4)Pset_Warranty (IFC2x3)	Identifier assigned to warranty.
WarrantyPeriod	Pset_Warranty (IFC4)Pset_Warranty (IFC2x3)	
WarrantyStartDate	NATSPEC BIMCOBie_Component Pset_Warranty (IFC4)Pset_Warranty (IFC2x3)	Format: YYYY-MM-DD.

Geometric data		
ConcreteCover	NATSPEC Spec	Min cover to reinforcement.
CrossSectionArea	NATSPEC BIM Qto_FootingBaseQuantities (IFC4)	
GrossSurfaceArea	Qto_FootingBaseQuantities (IFC4)	
GrossVolume	NATSPEC BIM Qto_FootingBaseQuantities (IFC4)	
Height	NATSPEC BIM Qto_FootingBaseQuantities (IFC4)	
Length	NATSPEC BIM Qto_FootingBaseQuantities (IFC4)	
NetVolume	Qto_FootingBaseQuantities (IFC4)	Takes all openings or recesses into account.
NominalHeight	COBie_ElementTypeCOBie_Specification	Typically the vertical characteristic dimension of the object.
NominalLength	COBie_ElementTypeCOBie_Specification	Typically the primary or larger of the two perpendicular horizontal dimensions of the object.
NominalWidth	COBie_ElementTypeCOBie_Specification	Typically the secondary or smaller of the two perpendicular horizontal dimensions of the object.
OuterSurfaceArea	Qto_FootingBaseQuantities (IFC4)	
Size	NATSPEC BIM COBie_ElementType COBie_Specification NATSPEC Spec	
Width	NATSPEC BIM Qto_FootingBaseQuantities (IFC4)	
Manufacturer data		
Accessories	NATSPEC BIM	Details of available accessories.

ArticleNumber	Pset_ManufacturerTypeInformation (IFC4) Pset_ManufacturerTypeInformation (IFC2x3)	Reference applied to product, according to scheme for article number definition defined by manufacturer. Often used as purchasing number.
AssemblyPlace	NATSPEC BIM Pset_ManufacturerTypeInformation (IFC4)	Defines where assembly is to take place. <b>Complete value with:</b> SITE, FACTORY or NOTDEFINED (IfcAssemblyPlaceEnum)
BarCode	COBiePset_ManufacturerOccurrence (IFC4) Pset_ManufacturerOccurrence (IFC2x3)	Bar code given to occurrence of the product.
BatchReference	Pset_ManufacturerOccurrence (IFC4) Pset_ManufacturerOccurrence (IFC2x3)	Identity of the batch from which the occurrence of the product is taken.
Defects	NATSPEC BIM	To record any defects found.
GlobalTradeItemNumber	Pset_ManufacturerTypeInformation (IFC4)	GTIN is an identifier for trade items developed by GS1 (www.gs1.org).
Manufacturer	COBieNATSPEC BIM Pset_ManufacturerTypeInformation (IFC4) Pset_ManufacturerTypeInformation (IFC2x3)	Name of the manufacturer (or assembler).
ManufacturerURL	NATSPEC BIM	URL hyperlink to the manufacturer's website.
ModelLabel	Pset_ManufacturerTypeInformation (IFC4)	The descriptive model name of the product model (or product line) as assigned by the manufacturer of the manufactured item.
ModelLabel	Pset_ManufacturerTypeInformation (IFC2x3)	The model number and/or unit designator assigned by the manufacturer of the manufactured item.
ModelReference	Pset_ManufacturerTypeInformation (IFC4)	The model number or designator of the product model (or product line) as assigned by the manufacturer of the manufactured item.
ModelReference	Pset_ManufacturerTypeInformation (IFC2x3)	The name of the manufactured item as used by the manufacturer.
OrderNumber	NATSPEC BIM	

PointOfContact	Pset_Warranty (IFC4) Pset_Warranty (IFC2x3)	Organization that should be contacted for action under the terms of the warranty.
ProductionYear	Pset_ManufacturerTypeInformation (IFC4) Pset_ManufacturerTypeInformation (IFC2x3)	
SerialNumber	COBiePset_ManufacturerOccurrence (IFC4) Pset_ManufacturerOccurrence (IFC2x3)	Serial number assigned to an occurrence of a product.
Performance data		
CapacityBendingMomentX	NATSPEC Spec	
CapacityBendingMomentY	NATSPEC Spec	
CapacityHorizontalLoad	NATSPEC Spec	
CapacityVerticalLoad	NATSPEC Spec	
ConcreteCompressiveStrength28Day	BIM Forum NATSPEC Spec	
DeadLoad	NATSPEC BIM	
DesignBendingMomentX	NATSPEC Spec	
DesignBendingMomentY	NATSPEC Spec	
DesignServiceabilityHorizontalLoad	NATSPEC Spec	
DesignServiceabilityVerticalLoad	NATSPEC Spec	
DesignUltimateHorizontalLoad	NATSPEC Spec	
DesignUltimateVerticalLoad	NATSPEC Spec	
LiveLoad	NATSPEC BIM	



Scheduling data		
InstallationSequence	NATSPEC BIM	
InstallationTime	NATSPEC BIM	
LeadTime	NATSPEC BIM	
Spatial and location data		
GISTag	NATSPEC BIM	
GPSTag	NATSPEC BIM	
Specification data		
BottomReinforcement	BIM Forum	
Color	COBie_ElementTypeCOBie_Specification	
ExposureClassification	NATSPEC Spec	
Finish	COBie_ElementTypeCOBie_Specification	Specification of surface finish.
LoadBearing	PSet_FootingCommon (IFC4)	Indicates if object is intended to carry loads. <b>Complete value with:</b> TRUE or FALSE (IfcBoolean)
Material	NATSPEC BIMCOBie_ElementType COBie_Specification	
PrimaryBottomReinforcement	NATSPEC Spec	
PrimaryTopReinforcement	NATSPEC Spec	
SecondaryBottomReinforcement	NATSPEC Spec	
SecondaryTopReinforcement	NATSPEC Spec	
ShearReinforcement	BIM Forum	

SpecificationCode	NATSPEC BIM	
SpecificationSystem	NATSPEC BIM	
SpecificationTitle	NATSPEC BIM	
Sustainability data		
CarbonFootprint	NATSPEC BIM	
ItemIsPartiallyRecycled	NATSPEC BIM	
ItemIsRecycled	NATSPEC BIM	
PostConsumerRecycledContent	NATSPEC BIM	
PostIndustrialRecycledContent	NATSPEC BIM	
PreConsumerRecycledContent	NATSPEC BIM	
RecycledContent	NATSPEC BIM	