

Structure Ruleset

Discipline: Structure

Organization: ifc-checker.com

Information: bimspot Structure Ruleset.

Basic structure rulesets ensure minimum standard of structural models.

Ruleset:

Formal Basics

Formal requirements are checked, which must be correct in any case.

Rule	Description
IFC Structure Check	This rule checks the correct ifc structure.
Floor Check	This rule checks if the model contains a building and floors. It is also checked whether all components are contained in floors, whether there are empty floors, if several floors have the same insertion height and if there are the same names on floors.
Unique GUID Check	This rule checks if GUIDs are unique.
Minimum Content Check	This rule verifies that the model has walls, slabs, columns.

Ruleset:

Geometry Basics

Geometry requirements are checked, which must be correct in any case.

Rule	Description
Double Elements Check	The ruleset checks for double elements.
Double Walls	The rule checks for double walls.
Double Beams	The rule checks for double beams.
Double Slabs	The rule checks for double slabs.
Double Stairs	The rule checks for double stairs.
Double Columns	The rule checks for double columns.
Double Ramps	The rule checks for double ramps.
Double Openings	The rule checks for double openings.
Double Footings	The rule checks for double footings.
Double Proxy Elements	The rule checks for double proxy elements.
Element Size Check	The ruleset checks for proper measurements of several elements.

Opening Dimensions Should Be Sensible	The ruleset checks for proper opening measurements.
Opening Size	This rule checks, if the opening size is minimum 0.10 m².
Wall Measurement Check	The ruleset checks for proper wall measurements.
Wall Height	The rule checks proper wall height (<400mm).
Wall Thickness	The rule checks proper wall thickness (>800mm).
Wall Length	The rule checks proper wall length (<200mm).
Slab Measurement Check	The ruleset checks for proper slab measurements.
Slab Area	The rule checks for proper slab area (>1m²).
Slab Thickness	The rule checks for proper slab thickness (<800mm).
Column Measurement Check	The ruleset checks for proper column measurements.
Column Size	The rule checks for proper column profile (>70mm/70mm or > dm 70mm)
Column Length	The rule checks for proper column length (>500mm; <12.000mm).
Structure Check	The ruleset checks for connected load bearing elements.
Load Bearing Walls Top Connection	This rule checks if load-bearing walls touch load-bearing walls or slabs on their top.
Load Bearing Walls Lower Connection	This rule checks if load-bearing walls touch load-bearing walls or slabs or footings on their bottom.
Load Bearing Columns Top Connection	This rule checks if load-bearing columns touch load-bearing walls, slabs, columns, beams or stairs on their top.
Load Bearing Columns Lower Connection	This rule checks if load-bearing columns touch load-bearing walls, slabs, columns, beams, stairs or footings on their bottom.
Load Bearing Beam Lower Connection	This rule checks if load-bearing beams touch load-bearing walls, slabs, columns on their bottom.

Ruleset:

Information Basics

Information requirements are checked, which must be correct in any case.

Rule	Description
Basic Wall/Column/Beam/Slab Properties	This rule checks if there are load bearing values to walls, slabs, beams, and columns.