

4.32 Cross Section Service

Cross Section Service

Bimplus DB

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Team DB

Important: All the APIs described in the Bimplus DB section applies to the Team DB as well. Replace the keyword "content" with the "team_slug" for working with the cross section definition and cross sections in Team DB.

eg: Bimplus DB: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions>. Similar call in Team DB will be https://api-stage.bimplus.net/v2/<team_slug>/crosssectiondefinitions.

Create a new cross section definition in Bimplus DB

URL / Resource / JSON Structure

Resource: content/crosssectiondefinitions

URL: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions>

Example: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions>

Optional query parameters

Name	Type	Default value	Description
check	boolean	true	When query parameter "check=true" is defined, the API call will check existence of the cross section definition. If cross section definition already exists in such case is returned error code 409 conflict. This is default behavior. When "check=false" this call will not check existence same cross section definition, in such case new cross section definition will be created.

JSON Structure:

Name	Mandatory / Optional	Type	Description
Id	will be ignored	string(guid)	Cross section definition Id
name	mandatory	string	Cross section definition name
description	optional	string	Short description of the cross section definition
freeAttributesId	optional	JSON Array	List of all free attribute Ids, where are defined all parameters for CSG-contour calculation
csgParameters	mandatory	JSON Array	List of objects which define all rules for calculation contour's vertex of CSG-geometry. Structure of this objects is described below.

JSON Structure of the object in "csgParameters" attribute :

Name	Mandatory / Optional	Type	Description
pointOrder	mandatory	int	Point order
command	mandatory	string	Command for creation CSG-Geometry contour e.g. "O", "L", "R",

xCoordinate	mandatory	string	Contains either direct numerical value of coordinate e.g. "0.0" or formula which can contain simple operations between numerical values and/or attribute values defined by attribute name e.g "(B-B1)/2+B1". Expression may contain mathematical operation: [sin], [cos], [tan], [pi], +, /, -, *
yCoordinate	mandatory	string	description see above in xCoordinate
zCoordinate	optional	string	description see above in xCoordinate

HTTP Method

POST

Description

Creates a new cross section definition in bimplus database. Cross section definition is defined as contour of CSG-geometry.

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

JSON
<pre>{ "name": "IPE", "description": "IPE-profil", "fabrication": "Rolled", "freeAttributesId": ["a51576ae-ecaa-43c0-b00c-1ae5efaae4f0", "46065318-8776-4f30-85ff-c7276b094097", "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd", "d5e91f99-ff75-4262-b21e-05dea7bff340", "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2"], "csgParameters": [{ "pointOrder": 1, "command": "O", "xCoordinate": "0.0", "yCoordinate": "0.0" }, { "pointOrder": 2, "command": "L", "xCoordinate": "0.0", "yCoordinate": "D" }, ...] }</pre>

Response

Status
Status: 201 Created

JSON
<pre>{ "name": "IPE", "description": "IPE-profil", "fabrication": "Rolled",</pre>

```

"freeAttributesId":["a51576ae-ecaa-43c0-b00c-1ae5efaae4f0",
  "46065318-8776-4f30-85ff-c7276b094097",
  "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd",
  "d5e91f99-ff75-4262-b21e-05dea7bff340",
  "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2"
],
"csgParameters":[{"pointOrder":1,
  "command":"O",
  "xCoordinate":"0.0",
  "yCoordinate":"0.0"
},
{
  "pointOrder":2,
  "command":"L",
  "xCoordinate":"0.0",
  "yCoordinate":"D"
},
{
  "pointOrder":3,
  "command":"L",
  "xCoordinate":"(B-B1)/2",
  "yCoordinate":"D"
},
{
  "pointOrder":4,
  "command":"R",
  "xCoordinate":"R",
  "yCoordinate":"0.0"
},
{
  "pointOrder":5,
  "command":"L",
  "xCoordinate":"(B-B1)/2",
  "yCoordinate":"T-D"
},
{
  "pointOrder":6,
  "command":"R",
  "xCoordinate":"R",
  "yCoordinate":"0.0"
},
{
  "pointOrder":7,
  "command":"L",
  "xCoordinate":"0.0",
  "yCoordinate":"T-D"
},
{
  "pointOrder":8,
  "command":"L",
  "xCoordinate":"0.0",
  "yCoordinate":"T"
},
{
  "pointOrder":9,
  "command":"L",
  "xCoordinate":"B",
  "yCoordinate":"T"
},
{
  "pointOrder":10,
  "command":"L",
  "xCoordinate":"B",
  "yCoordinate":"T-D"
},
{
  "pointOrder":11,
  "command":"L",
  "xCoordinate":"(B-B1)/2+B1",
  "yCoordinate":"T-D"
}

```

```

    },
    {
        "pointOrder":12,
        "command":"R",
        "xCoordinate":"R",
        "yCoordinate":"0.0"
    },
    {
        "pointOrder":13,
        "command":"L",
        "xCoordinate":"(B-B1)/2+B1",
        "yCoordinate":"D"
    },
    {
        "pointOrder":14,
        "command":"R",
        "xCoordinate":"R",
        "yCoordinate":"0.0"
    },
    {
        "pointOrder":15,
        "command":"L",
        "xCoordinate":"B",
        "yCoordinate":"D"
    },
    {
        "pointOrder":16,
        "command":"L",
        "xCoordinate":"B",
        "yCoordinate":"0.0"
    },
    {
        "pointOrder":17,
        "command":"L",
        "xCoordinate":"0.0",
        "yCoordinate":"0.0"
    }
    ],
    "id":"1b0b4c54-1084-4b7b-8b6b-d0154e44f05a"
}

```

Get details of the cross section definition

URL / Resource / JSON Structure

Resource: content/crosssectiondefinitions/<cross_section_definition_id>

URL: https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/<cross_section_definition_id>

Example: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/1b0b4c54-1084-4b7b-8b6b-d0154e44f05a>

URL / Resource / JSON Structure

Optional query parameters

Name	Type	Default value	Description
groups	boolean	false	When query parameter "groups=true" is defined, the API function returns all only group names to which is cross section definition assigned.

HTTP Method

GET

Description

Get details of a specified cross section definition

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

Response

Status
Status: 200 OK

JSON
<pre>{ "name": "IPE", "description": "IPE-profil", "freeAttributesId": ["a51576ae-ecaa-43c0-b00c-1ae5efaae4f0", "46065318-8776-4f30-85ff-c7276b094097", "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd", "d5e91f99-ff75-4262-b21e-05dea7bff340", "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2"], "csgParameters": [{ "pointOrder": 1, "command": "O", "xCoordinate": "0.0", "yCoordinate": "0.0" }, { "pointOrder": 2, "command": "L", "xCoordinate": "0.0", "yCoordinate": "D" }, { "pointOrder": 3, "command": "L", "xCoordinate": "(B-B1)/2", "yCoordinate": "D" }, { "pointOrder": 4, "command": "R", "xCoordinate": "R", "yCoordinate": "0.0" }, { "pointOrder": 5, "command": "L", "xCoordinate": "(B-B1)/2", "yCoordinate": "T-D" }, { "pointOrder": 6, "command": "R", "xCoordinate": "R", "yCoordinate": "0.0" }, { "pointOrder": 7,</pre>

```

        "command": "L",
        "xCoordinate": "0.0",
        "yCoordinate": "T-D"
    },
    {
        "pointOrder": 8,
        "command": "L",
        "xCoordinate": "0.0",
        "yCoordinate": "T"
    },
    {
        "pointOrder": 9,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "T"
    },
    {
        "pointOrder": 10,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "T-D"
    },
    {
        "pointOrder": 11,
        "command": "L",
        "xCoordinate": "(B-B1)/2+B1",
        "yCoordinate": "T-D"
    },
    {
        "pointOrder": 12,
        "command": "R",
        "xCoordinate": "R",
        "yCoordinate": "0.0"
    },
    {
        "pointOrder": 13,
        "command": "L",
        "xCoordinate": "(B-B1)/2+B1",
        "yCoordinate": "D"
    },
    {
        "pointOrder": 14,
        "command": "R",
        "xCoordinate": "R",
        "yCoordinate": "0.0"
    },
    {
        "pointOrder": 15,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "D"
    },
    {
        "pointOrder": 16,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "0.0"
    },
    {
        "pointOrder": 17,
        "command": "L",
        "xCoordinate": "0.0",
        "yCoordinate": "0.0"
    }
],
"id": "1b0b4c54-1084-4b7b-8b6b-d0154e44f05a"
}

```

Get all cross sections section definitions

URL / Resource / JSON Structure

Resource: content/crosssectiondefinitions

URL: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions>

Example: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions>

Optional query parameters

Name	Type	Default value	Description
groups	boolean	false	When query parameter "groups=true" is defined, the API function returns only all groups of crosssection definitions. All crosssection definitions are returned only if this parameter is set to false or missing.
norm	string		If query parameters groups is true than can be defined additional query parameters norm. In a such case the api function returns only groups of crosssection definitions for required norm. Eg. when norm=European api returns all 'European' norm groups of crosssection definitions.
types	boolean	false	When query parameter "types=true" is defined, the API function returns only id, name, description attributes of crosssection definition of all crosssection definitions (reduced crosssection definition). Complete crosssection definitions are returned only if this parameter is set to false or missing.

HTTP Method

GET

Description

Get details about all cross section definitions

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

Response

Status
Status: 200 OK

JSON
<pre>[{ "id": "1b0b4c54-1084-4b7b-8b6b-d0154e44f05a" "name": "IPE", "description": "IPE-profil", "FreeAttributesId": ["a51576ae-ecaa-43c0-b00c-1ae5efaae4f0", "46065318-8776-4f30-85ff-c7276b094097", "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd", "d5e91f99-ff75-4262-b21e-05dea7bff340", "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2"], "csgParameters": [{ "pointOrder": 1, "command": "0", "xCoordinate": "0.0", "yCoordinate": "0.0" }, { "pointOrder": 2, "command": "L", </pre>

```

        "xCoordinate": "0.0",
        "yCoordinate": "D"
    },
    {
        "pointOrder": 3,
        "command": "L",
        "xCoordinate": "(B-B1)/2",
        "yCoordinate": "D"
    },
    {
        "pointOrder": 4,
        "command": "R",
        "xCoordinate": "R",
        "yCoordinate": "0.0"
    },
    {
        "pointOrder": 5,
        "command": "L",
        "xCoordinate": "(B-B1)/2",
        "yCoordinate": "T-D"
    },
    {
        "pointOrder": 6,
        "command": "R",
        "xCoordinate": "R",
        "yCoordinate": "0.0"
    },
    {
        "pointOrder": 7,
        "command": "L",
        "xCoordinate": "0.0",
        "yCoordinate": "T-D"
    },
    {
        "pointOrder": 8,
        "command": "L",
        "xCoordinate": "0.0",
        "yCoordinate": "T"
    },
    {
        "pointOrder": 9,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "T"
    },
    {
        "pointOrder": 10,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "T-D"
    },
    {
        "pointOrder": 11,
        "command": "L",
        "xCoordinate": "(B-B1)/2+B1",
        "yCoordinate": "T-D"
    },
    {
        "pointOrder": 12,
        "command": "R",
        "xCoordinate": "R",
        "yCoordinate": "0.0"
    },
    {
        "pointOrder": 13,
        "command": "L",
        "xCoordinate": "(B-B1)/2+B1",
        "yCoordinate": "D"
    },
    {
        "pointOrder": 14,

```



```
        "command": "R",
        "xCoordinate": "R",
        "yCoordinate": "0.0"
      },
      {
        "pointOrder": 15,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "D"
      },
      {
        "pointOrder": 16,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "0.0"
      },
      {
        "pointOrder": 17,
        "command": "L",
        "xCoordinate": "0.0",
        "yCoordinate": "0.0"
      }
    ],
    ...
  ]
```

Update the cross section definition

URL / Resource / JSON Structure

Resource: content/crosssectiondefinitions/<cross_section_definition_id>

URL: https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/<cross_section_definition_id>

Example: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/1b0b4c54-1084-4b7b-8b6b-d0154e44f05a>

HTTP Method

PUT

Description

Updates specified cross section definition in bimplus database. Cross section definition is defined as contour of CSG-geometry. JSON structure is the same as is defined in '[Create new cross section definition](#)'

Request

Headers

Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088
Content-Type: application/json

JSON

```
{
  "name": "IPE",
  "description": "IPE-profil",
  "freeAttributesId": [
    "a51576ae-ecaa-43c0-b00c-1ae5efaae4f0",
    "46065318-8776-4f30-85ff-c7276b094097",
    "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd",
    "d5e91f99-ff75-4262-b21e-05dea7bff340",
    "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2"
  ],
  "csgParameters": [
    {
      "pointOrder": 1,
      "command": "O",
      "xCoordinate": "0.0",
      "yCoordinate": "0.0"
    },
    {
      "pointOrder": 2,
      "command": "L",
      "xCoordinate": "0.0",
      "yCoordinate": "D"
    },
    ...
  ],
  "id": "1b0b4c54-1084-4b7b-8b6b-d0154e44f05a"
}
```

Response

Status

Status: 200 Ok

JSON

```
{
  "name": "IPE",
  "description": "IPE-profil",
  "freeAttributesId": ["a51576ae-ecaa-43c0-b00c-1ae5efaae4f0",
    "46065318-8776-4f30-85ff-c7276b094097",
    "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd",
    "d5e91f99-ff75-4262-b21e-05dea7bff340",
    "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2"
  ],
  "csgParameters": [{
    "pointOrder": 1,
    "command": "O",
    "xCoordinate": "0.0",
    "yCoordinate": "0.0"
  },
  {
    "pointOrder": 2,
    "command": "L",
    "xCoordinate": "0.0",
    "yCoordinate": "D"
  },
  {
    "pointOrder": 3,
    "command": "L",
    "xCoordinate": "(B-B1)/2",
    "yCoordinate": "D"
  }
]
```

```

},
{
    "pointOrder":4,
    "command":"R",
    "xCoordinate":"R",
    "yCoordinate":"0.0"
},
{
    "pointOrder":5,
    "command":"L",
    "xCoordinate": "(B-B1)/2",
    "yCoordinate": "T-D"
},
{
    "pointOrder":6,
    "command":"R",
    "xCoordinate":"R",
    "yCoordinate":"0.0"
},
{
    "pointOrder":7,
    "command":"L",
    "xCoordinate":"0.0",
    "yCoordinate": "T-D"
},
{
    "pointOrder":8,
    "command":"L",
    "xCoordinate":"0.0",
    "yCoordinate": "T"
},
{
    "pointOrder":9,
    "command":"L",
    "xCoordinate": "B",
    "yCoordinate": "T"
},
{
    "pointOrder":10,
    "command":"L",
    "xCoordinate": "B",
    "yCoordinate": "T-D"
},
{
    "pointOrder":11,
    "command":"L",
    "xCoordinate": "(B-B1)/2+B1",
    "yCoordinate": "T-D"
},
{
    "pointOrder":12,
    "command":"R",
    "xCoordinate":"R",
    "yCoordinate":"0.0"
},
{
    "pointOrder":13,
    "command":"L",
    "xCoordinate": "(B-B1)/2+B1",
    "yCoordinate": "D"
},
{
    "pointOrder":14,
    "command":"R",
    "xCoordinate":"R",
    "yCoordinate":"0.0"
},
{
    "pointOrder":15,
    "command":"L",
    "xCoordinate": "B",

```

```

        "yCoordinate": "D"
      },
      {
        "pointOrder": 16,
        "command": "L",
        "xCoordinate": "B",
        "yCoordinate": "0.0"
      },
      {
        "pointOrder": 17,
        "command": "L",
        "xCoordinate": "0.0",
        "yCoordinate": "0.0"
      }
    ],
    "id": "1b0b4c54-1084-4b7b-8b6b-d0154e44f05a"
  }
}

```

Delete the cross section definition

URL / Resource / JSON Structure

Resource: content/crosssectiondefinitions/<cross_section_definition_id>

URL: https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/<cross_section_definition_id>

Example: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/1b0b4c54-1084-4b7b-8b6b-d0154e44f05a>

HTTP Method

DELETE

Description

Deletes a specified cross section definition from bimplus database.

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

Response

Status
Status: 200 Ok

Create a new cross section for cross section definition in Bimplus DB

URL / Resource / JSON Structure

Resource: content/crosssectiondefinitions/<cross_section_definition_id>/crosssections

URL: https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/<cross_section_definition_id>/crosssections

Example: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/1b0b4c54-1084-4b7b-8b6b-d0154e44f05a/crosssections>

Optional query parameters

Name	Type	Default value	Description
check	boolean	true	When query parameter "check=true" is defined, the API call will check existence of the cross section. If cross section already exists in such case is returned error code 409 conflict. This is default behavior. When "check=false" this call will not check existence same cross section, in such case new cross section will be created.

JSON Structure:

Name	Mandatory / Optional	Type	Description
Id	will be ignored	string(guid)	Cross section Id
name	mandatory	string	Cross section name
description	optional	string	Short description of the cross section
crossSectionParameters	mandatory	JSON Array	List of objects which define all parameters values for cross section. Set of parametres should correspond to set of parameters required by cross section definition for which cross section is created. Structure of objects in this array is described below.
crossSectionCharacteristics	optional	JSON Array	List of objects which define all parameters of sectional characteristics for cross section. e.g Elastic section modulus
shape	optional	JSON Array	List of points whole profile contour

JSON Structure of the object in "crossSectionParameters" attribute :

Name	Mandatory / Optional	Type	Description
freeAttribId	mandatory	string(guid)	Id of the Free Attribute (attribute is used in array "freeAttributesId" of cross section definition to define parameter name)
value	mandatory	object	free attribute value
name	optional	string	Name of free attribute

HTTP Method

POST

Description

Creates a new cross section for specified cross section definition in bimplus database.

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

JSON

```
{
  "name": "IPE-200",
  "description": "parameters IPE-200",
  "crossSectionParameters": [
    {
      "freeAttibId": "a51576ae-ecaa-43c0-b00c-1ae5efaae4f0",
      "value": 200
    },
    {
      "freeAttibId": "46065318-8776-4f30-85ff-c7276b094097",
      "value": 5.6
    },
    {
      "freeAttibId": "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd",
      "value": 100
    },
    {
      "freeAttibId": "d5e91f99-ff75-4262-b21e-05dea7bff340",
      "value": 8.5
    },
    {
      "freeAttibId": "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2",
      "value": 12
    }
  ],
  "crossSectionCharacteristics": [
    {
      "freeAttibId": "f6dccf78-0bb7-4fe7-bd24-a6dee284fcd0",
      "value": 200
    }
  ],
}
```

Response

Status

Status: 201 Created

JSON

```
{
  "name": "IPE-200",
  "description": "parameters IPE-200",
  "crossSectionParameters": [
    {
      "freeAttibId": "a51576ae-ecaa-43c0-b00c-1ae5efaae4f0",
      "value": 200,
      "name": "B"
    },
    {
      "freeAttibId": "46065318-8776-4f30-85ff-c7276b094097",
      "value": 5.6,
      "name": "r1"
    },
    {
      "freeAttibId": "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd",
      "value": 100,
      "name": "s"
    },
    {
      "freeAttibId": "d5e91f99-ff75-4262-b21e-05dea7bff340",
      "value": 8.5,
      "name": "t"
    },
    {
      "freeAttibId": "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2",
      "value": 12,
      "name": "h"
    }
  ],
  "crossSectionCharacteristics": [
    {
      "freeAttibId": "f6dccf78-0bb7-4fe7-bd24-a6dee284fcd0",
      "value": 200,
      "name": "Area"
    }
  ]
}
```

Get details of cross section

URL / Resource / JSON Structure

Resource: content/crosssections/<cross_section_id>

URL: https://api-stage.bimplus.net/v2/content/crosssections/<cross_section_id>

Example: <https://api-stage.bimplus.net/v2/content/crosssections/bef3f6a2-e869-4282-adab-84114ad672f7>

Optional query parameters

Name	Type	Default value	Description
group	string		When "group=Z" is defined the API will return only cross sections which belongs to group with name "Z".
norm	string		If query parameter 'group' is defined can be defined also additional query parameters 'norm'. In a such case the api function returns only cross sections which belongs to group with required name and norm. e.g. https://api-stage.bimplus.net/v2/content/crosssections?grupe=Z&norm=European API will return only cross sections which belongs to group with name "Z" and have a norm 'European'

filter	string		When filter "name=l200" is defined the API will return only cross sections which Name contains requested substring, e.g. if filter is "name=l1" will be returned all cross section which Name contains substring "l1". Like l100 l150, etc.
round	boolean	true	When round parameter is defined with value "false", API will return simplified cross section geometry. In such case has all arc segments radius equal to zero.
NOTE : To get details for cross section or groups of cross sections without known or available cross_section_id is possible to use this call without using cross_section_id, but in such case must be defined requested cross section(s) with filter. When is used filter to define requested cross sections will be returned all cross sections with matching filter pattern. e.g. to get all cross sections which names contains string 'H200' let's use api with filter https://api-stage.bimplus.net/v2/content/crosssections?filter=name=H200 In case you know only cross section name, this name can be used in place of <cross_section_id>. In this case will be returned wanted cross section with required name. If required name was not found will be returned error 404 Not found. e.g.: https://api-stage.bimplus.net/v2/content/crosssections/H200			

HTTP Method

GET

Description

Get details of a specified cross section

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

Response

Status
Status: 200 OK

JSON
<pre>{ "name": "IPE-200", "description": "parameters IPE-200", "id": "bef3f6a2-e869-4282-adab-84114ad672f7" "crossSectionParameters": [{ "freeAttibId": "a51576ae-ecaa-43c0-b00c-1ae5efaae4f0", "value": 200 "name": "B" }, { "freeAttibId": "46065318-8776-4f30-85ff-c7276b094097", "value": 5.6 "name": "r1" }, { "freeAttibId": "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd", "value": 100, "name": "s" }, { "freeAttibId": "d5e91f99-ff75-4262-b21e-05dea7bfff340", "value": 8.5 "name": "t" }] }</pre>


```

        {
            "freeAttibId": "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2",
            "value": 12
            "name": "h"
        }
    ],
    "crossSectionCharacteristics":
    [
        {
            "freeAttibId": "f6dccf78-0bb7-4fe7-bd24-a6dee284fcd0",
            "value": 200,
            "name": "Area"
        }
    ],
    "shape":
    [
        {
            "x": 0,
            "y": 0,
            "z": 0
        },
        {
            "x": 200,
            "y": 0,
            "z": 0
        },
        {
            "x": 200,
            "y": 108.5315793,
            "z": 0
        },
        {
            "x": 199.3260249,
            "y": 110.9033885,
            "z": 0
        },
        {
            "x": 197.7059317,
            "y": 112.7599257,
            "z": 0
        },
        ...
    ]
}

```

Get all cross sections from cross section definition

URL / Resource / JSON Structure

Resource: content/crosssectiondefinitions/<cross_section_definition_id>/crosssections

URL: https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/<cross_section_definition_id>/crosssections

Example: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/1b0b4c54-1084-4b7b-8b6b-d0154e44f05a/crosssections>

HTTP Method

GET

Description

Get all cross sections which were created for specified cross section definition

Request

Headers

Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088
Content-Type: application/json

Response

Status

Status: 200 OK

JSON

```
[
  {
    "name": "IPE-200",
    "description": "parameters IPE-200",
    "id": "bef3f6a2-e869-4282-adab-84114ad672f7"
    "crossSectionParameters":
    [
      {
        "freeAttibId": "a51576ae-ecaa-43c0-b00c-1ae5efaae4f0",
        "value": 200
        "name": "B
      },
      {
        "freeAttibId": "46065318-8776-4f30-85ff-c7276b094097",
        "value": 5.6
        "name": "r1
      },
      {
        "freeAttibId": "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd",
        "value": 100,
        "name": "s
      },
      {
        "freeAttibId": "d5e91f99-ff75-4262-b21e-05dea7bffa340",
        "value": 8.5
        "name": "t
      },
      {
        "freeAttibId": "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2",
        "value": 12
        "name": "h
      }
    ],
    "crossSectionCharacteristics":
    [
      {
        "freeAttibId": "f6dccf78-0bb7-4fe7-bd24-a6dee284fcd0",
        "value": 200,
        "name": "Area"
      }
    ],
    "shape":
    [
      {
        "x": 0,
        "y": 0,
        "z": 0
      },
      {
        "x": 200,
        "y": 0,
```

```
      "z": 0
    },
    {
      "x": 200,
      "y": 108.5315793,
      "z": 0
    },
    {
      "x": 199.3260249,
      "y": 110.9033885,
      "z": 0
    },
    {
      "x": 197.7059317,
      "y": 112.7599257,
      "z": 0
    },
    ...
  ],
  ...
]
```

Update cross section for cross section definition

URL / Resource / JSON Structure

Resource: content/crosssectiondefinitions/<cross_section_definition_id>/crosssections/<cross_section_id>

URL: https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/<cross_section_definition_id>/crosssections/<cross_section_id>

Example: <https://api-stage.bimplus.net/v2/content/crosssectiondefinitions/1b0b4c54-1084-4b7b-8b6b-d0154e44f05a/crosssections/bef3f6a2-e869-4282-adab-84114ad672f7>

HTTP Method

PUT

Description

Updates specified cross section of cross section definition in bimplus database.
JSON structure is the same as is defined in '[Create a new cross section for cross section definition in Bimplus DB](#)'

Request

Headers

Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088
Content-Type: application/json

JSON

```
{
  "name": "IPE-200",
  "description": "parameters IPE-200",
  "id": "bef3f6a2-e869-4282-adab-84114ad672f7"
  "crossSectionParameters":
  [
    {
      "freeAttibId": "a51576ae-ecaa-43c0-b00c-1ae5efaae4f0",
      "value": 200
    },
    {
      "freeAttibId": "46065318-8776-4f30-85ff-c7276b094097",
      "value": 5.6
    },
    {
      "freeAttibId": "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd",
      "value": 100,
    },
    {
      "freeAttibId": "d5e91f99-ff75-4262-b21e-05dea7bff340",
      "value": 8.5
    },
    {
      "freeAttibId": "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2",
      "value": 12
    }
  ],
  "crossSectionCharacteristics":
  [
    {
      "freeAttibId": "f6dccf78-0bb7-4fe7-bd24-a6dee284fcd0",
      "value": 200,
    }
  ],
}
```

Response

Status

Status: 200 Ok

JSON

```
{
  "name": "IPE-200",
  "description": "parameters IPE-200",
  "id": "bef3f6a2-e869-4282-adab-84114ad672f7"
  "crossSectionParameters":
  [
    {
      "freeAttibId": "a51576ae-ecaa-43c0-b00c-1ae5efaae4f0",
      "value": 200
      "name": "B"
    },
    {
      "freeAttibId": "46065318-8776-4f30-85ff-c7276b094097",
      "value": 5.6
      "name": "r1"
    },
    {

```

```

        "freeAttibId": "ec94c7ee-b810-4012-9e94-cc7ed2a9c4bd",
        "value": 100,
        "name": "s"
    },
    {
        "freeAttibId": "d5e91f99-ff75-4262-b21e-05dea7bff340",
        "value": 8.5
        "name": "t"
    },
    {
        "freeAttibId": "df51e064-ee1b-4b5d-bdaa-5b053fd8b8a2",
        "value": 12
        "name": "h"
    }
],
"crossSectionCharacteristics":
[
    {
        "freeAttibId": "f6dccf78-0bb7-4fe7-bd24-a6dee284fcd0",
        "value": 200,
        "name": "Area"
    }
],
"shape":
[
    {
        "x": 0,
        "y": 0,
        "z": 0
    },
    {
        "x": 200,
        "y": 0,
        "z": 0
    },
    {
        "x": 200,
        "y": 108.5315793,
        "z": 0
    },
    {
        "x": 199.3260249,
        "y": 110.9033885,
        "z": 0
    },
    {
        "x": 197.7059317,
        "y": 112.7599257,
        "z": 0
    },
    ...
]
}

```

Delete the cross section

URL / Resource / JSON Structure

Resource: content/crosssections/<cross_section_id>

URL: https://api-stage.bimplus.net/v2/content/crosssections/<cross_section_id>

Example: <https://api-stage.bimplus.net/v2/content/crosssections/1b0b4c54-1084-4b7b-8b6b-d0154e44f05a>

HTTP Method

DELETE

Description

Deletes a specified cross section from bimplus database.

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

Response

Status
Status: 200 Ok