## **Beam-Related Methods**

Beams in VisualARQ are structural elements with profiles, alignments, cuts, and load-bearing properties. Styles define defaults, size profiles specify dimensions, and templates are base shapes (built-in or custom). Methods cover creation, modification, queries, and profile management (shared with columns, etc.).

AddBeamStyle

* Signature: Guid AddBeamStyle(string name)
* Description: Creates a new beam style and returns its Guid.
* Example: style\_id = va.AddBeamStyle("MyBeam")
* Notes: Check existence first with va.GetAllBeamStyle() to list existing styles (returns list of Guids; use va.GetStyleName(id) to match names). Use va.IsBeamStyle(id) to verify.

AddBeamStyleSizeProfile

* Signature: Guid AddBeamStyleSizeProfile(Guid beamStyleId, String name)
* Description: Adds a size profile to the beam style, returns the profile Guid.
* Example: profile\_id = va.AddBeamStyleSizeProfile(style\_id, "100x200")
* Notes: Name is for the size (e.g., dimensions). Associate with template via SetBeamStyleProfileTemplate. Use va.IsBeamStyleSizeProfile to verify.

AddBeam

* Signature: Guid AddBeam(Guid styleId, Point3d startPoint, Point3d endPoint)
* Description: Creates a beam from start to end point using the specified style, returns the beam Guid.
* Example: from Rhino.Geometry import Point3d start = Point3d(0, 0, 0) end = Point3d(10, 0, 0) beam\_id = va.AddBeam(style\_id, start, end)
* Notes: Beam is linear; for curved, use AddBeamsFromCurves.

AddBeamsFromCurves

* Signature: Guid[] AddBeamsFromCurves(Guid styleId, IEnumerable<curve> curves)</curve>
* Description: Creates beams from a list of curves using the specified style, returns array of beam Guids.
* Example: import rhinoscriptsyntax as rs from Rhino.Geometry import Curve curve\_ids = rs.GetObjects("Select curves", 4) # 4 = curve filter curves = [rs.coercecurve(id) for id in curve\_ids] beam\_ids = va.AddBeamsFromCurves(style\_id, curves)
* Notes: Curves can be lines or arcs; beams follow the path.

GetAllBeamStyle

* Signature: Guid[] GetAllBeamStyle()
* Description: Returns array of all beam style Guids in the document.
* Example: style\_ids = va.GetAllBeamStyle() for id in style\_ids: print(va.GetStyleName(id)) # Get names

FindBeamStyle

* Signature: Guid FindBeamStyle(String name)
* Description: Finds a beam style Guid by name.
* Example: style\_id = va.FindBeamStyle("MyBeam")
* Notes: Returns Guid.Empty if not found.

FindBeamStyleSizeProfile

* Signature: Guid FindBeamStyleSizeProfile(Guid beamStyleId, String name)
* Description: Finds a size profile Guid in a beam style by name.
* Example: profile\_id = va.FindBeamStyleSizeProfile(style\_id, "100x200")
* Notes: Returns Guid.Empty if not found.

FindBeamsBySizeProfile

* Signature: Guid[] FindBeamsBySizeProfile(Guid sizeProfileId)
* Description: Finds all beam Guids using a specific size profile.
* Example: beams = va.FindBeamsBySizeProfile(profile\_id)

GetBeamStyleFromSizeProfile

* Signature: Guid GetBeamStyleFromSizeProfile(Guid sizeProfileId)
* Description: Gets the parent beam style Guid from a size profile.
* Example: style\_id = va.GetBeamStyleFromSizeProfile(profile\_id)

GetBeamStyleProfileTemplate

* Signature: Guid GetBeamStyleProfileTemplate(Guid beamStyleId)
* Description: Gets the profile template Guid for a beam style.
* Example: template\_id = va.GetBeamStyleProfileTemplate(style\_id)

GetBeamStyleSizeProfiles

* Signature: Guid[] GetBeamStyleSizeProfiles(Guid beamStyleId)
* Description: Gets array of size profile Guids for a beam style.
* Example: profiles = va.GetBeamStyleSizeProfiles(style\_id) for p in profiles: print(va.GetStyleComponentName(p)) # Get names

GetCurrentBeamStyle

* Signature: Guid GetCurrentBeamStyle()
* Description: Gets the current/default beam style Guid.
* Example: current\_id = va.GetCurrentBeamStyle()

SetCurrentBeamStyle

* Signature: Boolean SetCurrentBeamStyle(Guid styleId)
* Description: Sets the current/default beam style. Returns True on success.
* Example: success = va.SetCurrentBeamStyle(style\_id)

IsBeamStyleSizeProfile

* Signature: Boolean IsBeamStyleSizeProfile(Guid beamStyleId, Guid sizeProfileId)
* Description: Checks if a Guid is a size profile in the beam style.
* Example: is\_size = va.IsBeamStyleSizeProfile(style\_id, profile\_id)

SetBeamStyleProfileTemplate

* Signature: Boolean SetBeamStyleProfileTemplate(Guid beamStyleId, Guid profileId)
* Description: Sets the profile template for a beam style. Returns True on success.
* Example: success = va.SetBeamStyleProfileTemplate(style\_id, template\_id)
* Notes: ProfileId from va.GetCircularProfileTemplate() or similar built-in.

GetBeamPathCurve

* Signature: Curve GetBeamPathCurve(Guid beamId)
* Description: Gets the path curve of a beam instance.
* Example: path = va.GetBeamPathCurve(beam\_id) rs.AddCurve(path) # Visualize

SetBeamPathCurve

* Signature: Boolean SetBeamPathCurve(Guid beamId, Curve curve)
* Description: Sets the path curve for a beam instance. Returns True on success.
* Example: new\_curve\_id = rs.AddLine((0,0,0), (15,0,0)) curve = rs.coercecurve(new\_curve\_id) success = va.SetBeamPathCurve(beam\_id, curve)
* Notes: Updates beam geometry; curve should be valid for beam.

GetBeamProfile

* Signature: Guid GetBeamProfile(Guid beamId)
* Description: Gets the profile Guid of a beam instance.
* Example: profile\_id = va.GetBeamProfile(beam\_id)

SetBeamProfile

* Signature: Boolean SetBeamProfile(Guid beamId, Guid profileId)
* Description: Sets the profile for a beam instance. Returns True on success.
* Example: success = va.SetBeamProfile(beam\_id, new\_profile\_id)
* Notes: ProfileId from va.AddBeamStyleSizeProfile or similar.

GetBeamProfileAlignment

* Signature: BeamProfileAlignment GetBeamProfileAlignment(Guid beamId)
* Description: Gets the profile alignment of a beam instance.
* Example: alignment = va.GetBeamProfileAlignment(beam\_id)

SetBeamProfileAlignment

* Signature: Boolean SetBeamProfileAlignment(Guid beamId, BeamProfileAlignment alignment)
* Description: Sets the profile alignment for a beam instance. Returns True on success.
* Example: success = va.SetBeamProfileAlignment(beam\_id, va.BeamProfileAlignment.Center)

GetBeamProfileAlignmentOffset

* Signature: Vector2d GetBeamProfileAlignmentOffset(Guid beamId)
* Description: Gets the alignment offset (X/Y) of the beam profile.
* Example: offset = va.GetBeamProfileAlignmentOffset(beam\_id) print(offset.X, offset.Y)

SetBeamProfileAlignmentOffset

* Signature: Boolean SetBeamProfileAlignmentOffset(Guid beamId, Vector2d alignmentOffset)
* Description: Sets the alignment offset for the beam profile. Returns True on success.
* Example: from Rhino.Geometry import Vector2d offset = Vector2d(0.1, 0.2) success = va.SetBeamProfileAlignmentOffset(beam\_id, offset)

GetBeamProfileRotation

* Signature: Double GetBeamProfileRotation(Guid beamId)
* Description: Gets the rotation angle (radians) of the beam profile.
* Example: rotation = va.GetBeamProfileRotation(beam\_id)

SetBeamProfileRotation

* Signature: Boolean SetBeamProfileRotation(Guid beamId, Double rotation)
* Description: Sets the rotation angle for the beam profile. Returns True on success.
* Example: import math success = va.SetBeamProfileRotation(beam\_id, math.pi / 4) # 45 degrees

GetBeamStartCutType

* Signature: BeamCutType GetBeamStartCutType(Guid beamId)
* Description: Gets the cut type at the start of the beam.
* Example: cut\_type = va.GetBeamStartCutType(beam\_id)

SetBeamStartCutType

* Signature: Boolean SetBeamStartCutType(Guid beamId, BeamCutType cutType)
* Description: Sets the cut type at the start of the beam. Returns True on success.
* Example: success = va.SetBeamStartCutType(beam\_id, va.BeamCutType.MiterJoint)

GetBeamEndCutType

* Signature: BeamCutType GetBeamEndCutType(Guid beamId)
* Description: Gets the cut type at the end of the beam.
* Example: cut\_type = va.GetBeamEndCutType(beam\_id)

SetBeamEndCutType

* Signature: Boolean SetBeamEndCutType(Guid beamId, BeamCutType cutType)
* Description: Sets the cut type at the end of the beam. Returns True on success.
* Example: success = va.SetBeamEndCutType(beam\_id, va.BeamCutType.Vertical)

IsBeam

* Signature: Boolean IsBeam(Guid id)
* Description: Checks if the Guid is a beam instance.
* Example: is\_beam = va.IsBeam(object\_id)

IsBeamStyle

* Signature: Boolean IsBeamStyle(Guid id)
* Description: Checks if the Guid is a beam style.
* Example: is\_style = va.IsBeamStyle(style\_id)

IsBeamLoadBearing

* Signature: Boolean IsBeamLoadBearing(Guid beamId)
* Description: Checks if the beam is load-bearing.
* Example: load\_bearing = va.IsBeamLoadBearing(beam\_id)

SetBeamLoadBearing

* Signature: Boolean SetBeamLoadBearing(Guid beamId, Boolean loadBearing)
* Description: Sets whether the beam is load-bearing. Returns True on success.
* Example: success = va.SetBeamLoadBearing(beam\_id, True)

IsBeamProfileMirrored

* Signature: Boolean IsBeamProfileMirrored(Guid beamId)
* Description: Checks if the beam profile is mirrored.
* Example: mirrored = va.IsBeamProfileMirrored(beam\_id)

SetBeamProfileMirrored

* Signature: Boolean SetBeamProfileMirrored(Guid beamId, Boolean mirrored)
* Description: Sets whether the beam profile is mirrored. Returns True on success.
* Example: success = va.SetBeamProfileMirrored(beam\_id, True)

RenameStyle

* Signature: Boolean RenameStyle(Guid styleId, String newName)
* Description: Renames a beam style. Returns True on success.
* Example: success = va.RenameStyle(style\_id, "NewBeamStyle")

GetStyleName

* Signature: String GetStyleName(Guid styleId)
* Description: Gets the name of a beam style.
* Example: name = va.GetStyleName(style\_id)

DeleteStyle

* Signature: Boolean DeleteStyle(Guid styleId)
* Description: Deletes a beam style. Returns True on success.
* Example: success = va.DeleteStyle(style\_id)
* Notes: May fail if style is in use.

DeleteStyleComponent

* Signature: Boolean DeleteStyleComponent(Guid componentId)
* Description: Deletes a style component (e.g., size profile). Returns True on success.
* Example: success = va.DeleteStyleComponent(profile\_id)
* Notes: Use for removing size profiles; may fail if in use.

## **Columns-Related Methods**

Columns are similar to beams but vertical, with alignments, coatings, insert marks, and extensions. Styles define profiles, blocks for model/plan views.

AddColumnStyle

* Signatures (Overloads):
  + Guid AddColumnStyle(String name, Guid profileId, Guid modelBlockId, Guid planBlockId)
  + Guid AddColumnStyle(String name, Guid profileId)
* Description: Creates a new column style, optionally with model/plan blocks, returns the Guid.
* Example:  
   Basic  
   style\_id = va.AddColumnStyle("MyColumn", profile\_id)  
   With blocks  
   style\_id2 = va.AddColumnStyle("MyColumn2", profile\_id, model\_block\_id, plan\_block\_id)
* Notes: ProfileId from profiles (shared with beams). Blocks for custom representation.

AddColumn

* Signature: Guid AddColumn(Guid columnStyleId, Point3d position, Double rotation)
* Description: Creates a column at position with rotation using the style, returns the Guid.
* Example: from Rhino.Geometry import Point3d pos = Point3d(0, 0, 0) column\_id = va.AddColumn(style\_id, pos, 0.0) # No rotation

GetAllColumnStyleIds

* Signature: Guid[] GetAllColumnStyleIds()
* Description: Returns array of all column style Guids.
* Example: style\_ids = va.GetAllColumnStyleIds()

GetCurrentColumnStyle

* Signature: Guid GetCurrentColumnStyle()
* Description: Gets the current/default column style Guid.
* Example: current\_id = va.GetCurrentColumnStyle()

SetCurrentColumnStyle

* Signature: Boolean SetCurrentColumnStyle(Guid styleId)
* Description: Sets the current/default column style. Returns True on success.
* Example: success = va.SetCurrentColumnStyle(style\_id)

AddColumnStyleSizeProfile

* Signature: Guid AddColumnStyleSizeProfile(Guid columnStyleId, String name)
* Description: Adds a size profile to the column style, returns the profile Guid.
* Example: profile\_id = va.AddColumnStyleSizeProfile(style\_id, "200x200")

GetColumnStyleSizeProfiles

* Signature: Guid[] GetColumnStyleSizeProfiles(Guid columnStyleId)
* Description: Gets array of size profile Guids for a column style.
* Example: profiles = va.GetColumnStyleSizeProfiles(style\_id)

FindColumnStyleSizeProfile

* Signature: Guid FindColumnStyleSizeProfile(Guid columnStyleId, String name)
* Description: Finds a size profile Guid in a column style by name.
* Example: profile\_id = va.FindColumnStyleSizeProfile(style\_id, "200x200")
* Notes: Returns Guid.Empty if not found.

GetColumnStyleFromSizeProfile

* Signature: Guid GetColumnStyleFromSizeProfile(Guid sizeProfileId)
* Description: Gets the parent column style Guid from a size profile.
* Example: style\_id = va.GetColumnStyleFromSizeProfile(profile\_id)

GetColumnStyleProfileTemplate

* Signature: Guid GetColumnStyleProfileTemplate(Guid columnStyleId)
* Description: Gets the profile template Guid for a column style.
* Example: template\_id = va.GetColumnStyleProfileTemplate(style\_id)

SetColumnStyleProfileTemplate

* Signature: Boolean SetColumnStyleProfileTemplate(Guid columnStyleId, Guid profileId)
* Description: Sets the profile template for a column style. Returns True on success.
* Example: success = va.SetColumnStyleProfileTemplate(style\_id, template\_id)

IsColumnStyleSizeProfile

* Signature: Boolean IsColumnStyleSizeProfile(Guid columnStyleId, Guid sizeProfileId)
* Description: Checks if a Guid is a size profile in the column style.
* Example: is\_size = va.IsColumnStyleSizeProfile(style\_id, profile\_id)

GetColumnPosition

* Signature: Point3d GetColumnPosition(Guid columnId)
* Description: Gets the position of a column instance.
* Example: pos = va.GetColumnPosition(column\_id)

SetColumnPosition

* Signature: Boolean SetColumnPosition(Guid columnId, Point3d newPosition)
* Description: Sets the position of a column instance. Returns True on success.
* Example: new\_pos = Point3d(5, 5, 0) success = va.SetColumnPosition(column\_id, new\_pos)

GetColumnRotation

* Signature: Double GetColumnRotation(Guid columnId)
* Description: Gets the rotation (radians) of a column instance.
* Example: rotation = va.GetColumnRotation(column\_id)

SetColumnRotation

* Signature: Boolean SetColumnRotation(Guid columnId, Double newAngle)
* Description: Sets the rotation of a column instance. Returns True on success.
* Example: success = va.SetColumnRotation(column\_id, math.pi / 2) # 90 degrees

GetColumnAlignment

* Signature: ColumnAlignment GetColumnAlignment(Guid columnId)
* Description: Gets the alignment of a column instance.
* Example: alignment = va.GetColumnAlignment(column\_id)

SetColumnAlignment

* Signature: Boolean SetColumnAlignment(Guid columnId, ColumnAlignment alignment)
* Description: Sets the alignment for a column instance. Returns True on success.
* Example: success = va.SetColumnAlignment(column\_id, va.ColumnAlignment.Center)

GetColumnAlignmentOffset

* Signature: Vector2d GetColumnAlignmentOffset(Guid columnId)
* Description: Gets the alignment offset (X/Y) of a column instance.
* Example: offset = va.GetColumnAlignmentOffset(column\_id)

GetColumnHeight

* Signature: Double GetColumnHeight(Guid columnId)
* Description: Gets the height of a column instance.
* Example: height = va.GetColumnHeight(column\_id)

SetColumnHeight

* Signature: Boolean SetColumnHeight(Guid columnId, Double height)
* Description: Sets the height for a column instance. Returns True on success.
* Example: success = va.SetColumnHeight(column\_id, 4.0)

GetColumnHeightSource

* Signature: ValueSource GetColumnHeightSource(Guid columnId)
* Description: Gets the height source for a column instance.
* Example: source = va.GetColumnHeightSource(column\_id)

SetColumnHeightSource

* Signature: Boolean SetColumnHeightSource(Guid columnId, ValueSource source)
* Description: Sets the height source for a column instance. Returns True on success.
* Example: success = va.SetColumnHeightSource(column\_id, va.ValueSource.Style)

GetColumnProfile

* Signature: Guid GetColumnProfile(Guid columnId)
* Description: Gets the profile Guid of a column instance.
* Example: profile\_id = va.GetColumnProfile(column\_id)

SetColumnProfile

* Signature: Boolean SetColumnProfile(Guid columnId, Guid profileId)
* Description: Sets the profile for a column instance. Returns True on success.
* Example: success = va.SetColumnProfile(column\_id, new\_profile\_id)

GetColumnCoatingThickness

* Signature: Double GetColumnCoatingThickness(Guid coatingId)
* Description: Gets the coating thickness of a column.
* Example: thickness = va.GetColumnCoatingThickness(coating\_id)

SetColumnCoatingThickness

* Signature: Boolean SetColumnCoatingThickness(Guid coatingId, Double thickness)
* Description: Sets the coating thickness for a column. Returns True on success.
* Example: success = va.SetColumnCoatingThickness(coating\_id, 0.02)

GetColumnInsertMark

* Signature: ColumnInsertMark GetColumnInsertMark(Guid columnId)
* Description: Gets the insert mark type of a column instance.
* Example: mark = va.GetColumnInsertMark(column\_id)

SetColumnInsertMark

* Signature: Boolean SetColumnInsertMark(Guid columnId, ColumnInsertMark insertMark)
* Description: Sets the insert mark type for a column instance. Returns True on success.
* Example: success = va.SetColumnInsertMark(column\_id, va.ColumnInsertMark.Axis)

GetColumnExtensionObjects

* Signature: Guid[] GetColumnExtensionObjects(Guid columnId, ColumnExtendDirection direction)
* Description: Gets array of objects the column is extended to in the direction.
* Example: objects = va.GetColumnExtensionObjects(column\_id, va.ColumnExtendDirection.Top)

ExtendColumnToObject

* Signature: Boolean ExtendColumnToObject(Guid columnId, ColumnExtendDirection direction, Guid objectId)
* Description: Extends the column to an object in the direction. Returns True on success.
* Example: success = va.ExtendColumnToObject(column\_id, va.ColumnExtendDirection.Top, slab\_id)

UnextendColumnFromObject

* Signature: Boolean UnextendColumnFromObject(Guid columnId, ColumnExtendDirection direction, Guid objectId)
* Description: Removes extension from a specific object in the direction. Returns True on success.
* Example: success = va.UnextendColumnFromObject(column\_id, va.ColumnExtendDirection.Top, slab\_id)

UnextendColumnFromAllObjects

* Signature: Boolean UnextendColumnFromAllObjects(Guid columnId, ColumnExtendDirection direction)
* Description: Removes all extensions in the direction. Returns True on success.
* Example: success = va.UnextendColumnFromAllObjects(column\_id, va.ColumnExtendDirection.Bottom)

IsColumnExtended

* Signature: Boolean IsColumnExtended(Guid columnId, ColumnExtendDirection direction)
* Description: Checks if the column is extended in the direction.
* Example: extended = va.IsColumnExtended(column\_id, va.ColumnExtendDirection.Top)

IsColumnExtendedToObject

* Signature: Boolean IsColumnExtendedToObject(Guid columnId, ColumnExtendDirection direction, Guid objectId)
* Description: Checks if the column is extended to a specific object in the direction.
* Example: extended\_to = va.IsColumnExtendedToObject(column\_id, va.ColumnExtendDirection.Top, slab\_id)

IsColumnLoadBearing

* Signature: Boolean IsColumnLoadBearing(Guid columnId)
* Description: Checks if the column is load-bearing.
* Example: load\_bearing = va.IsColumnLoadBearing(column\_id)

SetColumnLoadBearing

* Signature: Boolean SetColumnLoadBearing(Guid columnId, Boolean loadBearing)
* Description: Sets whether the column is load-bearing. Returns True on success.
* Example: success = va.SetColumnLoadBearing(column\_id, True)

IsColumnMirrored

* Signature: Boolean IsColumnMirrored(Guid columnId)
* Description: Checks if the column profile is mirrored.
* Example: mirrored = va.IsColumnMirrored(column\_id)

SetColumnMirrored

* Signature: Boolean SetColumnMirrored(Guid columnId, Boolean mirrored)
* Description: Sets whether the column profile is mirrored. Returns True on success.
* Example: success = va.SetColumnMirrored(column\_id, True)

GetColumnStyleModelBlock

* Signature: Guid GetColumnStyleModelBlock(Guid columnStyleId)
* Description: Gets the model block Guid for a column style.
* Example: model\_block = va.GetColumnStyleModelBlock(style\_id)

SetColumnStyleModelBlock

* Signature: Boolean SetColumnStyleModelBlock(Guid columnStyleId, Guid modelBlockId)
* Description: Sets the model block for a column style. Returns True on success.
* Example: success = va.SetColumnStyleModelBlock(style\_id, block\_id)

GetColumnStylePlanBlock

* Signature: Guid GetColumnStylePlanBlock(Guid columnStyleId)
* Description: Gets the plan block Guid for a column style.
* Example: plan\_block = va.GetColumnStylePlanBlock(style\_id)

SetColumnStylePlanBlock

* Signature: Boolean SetColumnStylePlanBlock(Guid columnStyleId, Guid planBlockId)
* Description: Sets the plan block for a column style. Returns True on success.
* Example: success = va.SetColumnStylePlanBlock(style\_id, block\_id)

IsColumn

* Signature: Boolean IsColumn(Guid id)
* Description: Checks if the Guid is a column instance.
* Example: is\_column = va.IsColumn(id)

IsColumnStyle

* Signature: Boolean IsColumnStyle(Guid id)
* Description: Checks if the Guid is a column style.
* Example: is\_style = va.IsColumnStyle(id)

GetColumnStyleId

* Signature: Guid GetColumnStyleId(String name)
* Description: Gets the column style Guid by name.
* Example: style\_id = va.GetColumnStyleId("MyColumn")

DeleteStyle

* Signature: Boolean DeleteStyle(Guid styleId)
* Description: Deletes a column style. Returns True on success.
* Example: success = va.DeleteStyle(style\_id)
* Notes: May fail if in use.

RenameStyle

* Signature: Boolean RenameStyle(Guid styleId, String newName)
* Description: Renames a column style. Returns True on success.
* Example: success = va.RenameStyle(style\_id, "NewColumnStyle")

GetStyleName

* Signature: String GetStyleName(Guid styleId)
* Description: Gets the name of a column style.
* Example: name = va.GetStyleName(style\_id)

DeleteStyleComponent

* Signature: Boolean DeleteStyleComponent(Guid componentId)
* Description: Deletes a style component (e.g., size profile). Returns True on success.
* Example: success = va.DeleteStyleComponent(profile\_id)

Enums/Options Reference for Columns

* ColumnAlignment: TopLeft (0), TopMiddle (1), TopRight (2), MiddleLeft (3), Center (4), MiddleRight (5), BottomLeft (6), BottomMiddle (7), BottomRight (8)
* ColumnExtendDirection: Top (0), Bottom (1)
* ColumnInsertMark: None (0), Triangular (1), Circular (2), Axis (3)

AddColumnCoating

* Signature: Guid AddColumnCoating(Guid columnStyleId, String name, Double thickness)
* Description: Adds a coating to the column style, returns the coating Guid.
* Example: coating\_id = va.AddColumnCoating(style\_id, "Paint", 0.002)

GetColumnCoatingThickness

* Signature: Double GetColumnCoatingThickness(Guid coatingId)
* Description: Gets the thickness of a column coating.
* Example: thickness = va.GetColumnCoatingThickness(coating\_id)

SetColumnCoatingThickness

* Signature: Boolean SetColumnCoatingThickness(Guid coatingId, Double thickness)
* Description: Sets the thickness of a column coating. Returns True on success.
* Example: success = va.SetColumnCoatingThickness(coating\_id, 0.003)

FindColumnsBySizeProfile

* Signature: Guid[] FindColumnsBySizeProfile(Guid sizeProfileId)
* Description: Finds all column Guids using a specific size profile.
* Example: columns = va.FindColumnsBySizeProfile(profile\_id)

## **Profile-Related Methods (Shared for Beams, Columns, etc.)**

Profiles define the cross-section. Built-in templates (no Add\* methods; use Get\*Template) for standard shapes; custom via AddCurveProfileTemplate.

AddCurveProfileTemplate

* Signature: Guid AddCurveProfileTemplate(String name, CurveProfileSize profileSize)
* Description: Adds a custom curve profile template, returns the template Guid.
* Example: from VisualARQ.Script import CurveProfileSize profile\_size = CurveProfileSize() # Create with curve params; test for details template\_id = va.AddCurveProfileTemplate("CustomCurve", profile\_size)

GetCurveProfileTemplates

* Signature: Guid[] GetCurveProfileTemplates()
* Description: Returns array of all curve profile template Guids.
* Example: templates = va.GetCurveProfileTemplates()

SetCurveProfileSize

* Signature: Boolean SetCurveProfileSize(Guid profileId, CurveProfileSize profileSize)
* Description: Sets the size for a curve profile. Returns True on success.
* Example: success = va.SetCurveProfileSize(profile\_id, new\_profile\_size)

GetCurveProfileSize

* Signature: CurveProfileSize GetCurveProfileSize(Guid profileId)
* Description: Gets the size of a curve profile.
* Example: size = va.GetCurveProfileSize(profile\_id)

GetCircularProfileTemplate

* Signature: Guid GetCircularProfileTemplate()
* Description: Gets the built-in circular profile template Guid.
* Example: template\_id = va.GetCircularProfileTemplate()

SetCircularProfileSize

* Signature: Boolean SetCircularProfileSize(Guid profileId, CircularProfileSize profileSize)
* Description: Sets the size for a circular profile. Returns True on success.
* Example: from VisualARQ.Script import CircularProfileSize size = CircularProfileSize() # Assuming constructor with diameter success = va.SetCircularProfileSize(profile\_id, size)

GetCircularProfileSize

* Signature: CircularProfileSize GetCircularProfileSize(Guid profileId)
* Description: Gets the size of a circular profile.
* Example: size = va.GetCircularProfileSize(profile\_id)

(Similar for other shapes: CircularHollow, Rectangular, RectangularHollow, RectangularRounded, IShape, LShape, TShape, UShape, GothicArch, QuarterArch, RomanArch – Get*Template, Set*Size, Get\*Size)

IsCurveProfile

* Signature: Boolean IsCurveProfile(Guid id)
* Description: Checks if the Guid is a curve profile.
* Example: is\_curve = va.IsCurveProfile(profile\_id)

IsCircularProfile

* Signature: Boolean IsCircularProfile(Guid id)
* Description: Checks if the Guid is a circular profile.
* Example: is\_circular = va.IsCircularProfile(profile\_id)

(Similar Is\* for other shapes: CircularHollow, Rectangular, RectangularHollow, RectangularRounded, IShape, LShape, TShape, UShape, GothicArch, QuarterArch, RomanArch)

IsStructuralProfile

* Signature: Boolean IsStructuralProfile(Guid id)
* Description: Checks if the Guid is a structural profile (e.g., I, L shapes).
* Example: is\_structural = va.IsStructuralProfile(profile\_id)

DeleteProfile

* Signature: Boolean DeleteProfile(Guid profileId)
* Description: Deletes a profile. Returns True on success.
* Example: success = va.DeleteProfile(profile\_id)
* Notes: May fail if in use.

RenameProfile

* Signature: Boolean RenameProfile(Guid profileId, String newName)
* Description: Renames a profile. Returns True on success.
* Example: success = va.RenameProfile(profile\_id, "NewProfileName")

CopyProfile

* Signature: Boolean CopyProfile(Guid sourceProfileId, Guid targetProfileId)
* Description: Copies properties from source to target profile. Returns True on success.
* Example: success = va.CopyProfile(source\_id, target\_id)

GetProfileName

* Signature: String GetProfileName(Guid profileId)
* Description: Gets the name of a profile.
* Example: name = va.GetProfileName(profile\_id)

GetProfileTemplates

* Signature: Guid[] GetProfileTemplates()
* Description: Returns array of all profile template Guids (including built-in).
* Example: templates = va.GetProfileTemplates()

FindProfileTemplate

* Signature: Guid FindProfileTemplate(String name)
* Description: Finds a profile template Guid by name.
* Example: template\_id = va.FindProfileTemplate("Circular")
* Notes: Returns Guid.Empty if not found.

IsProfileTemplate

* Signature: Boolean IsProfileTemplate(Guid id)
* Description: Checks if the Guid is a profile template.
* Example: is\_template = va.IsProfileTemplate(id)

Enums/Options Reference for Beams

* BeamProfileAlignment: TopLeft (0), TopMiddle (1), TopRight (2), MiddleLeft (3), Center (4), MiddleRight (5), BottomLeft (6), BottomMiddle (7), BottomRight (8)
* BeamCutType: None (0), MiterJoint (1), Horizontal (2), Vertical (3)