

## BDSBeamPipeFactoryBase

```
# lengthSafety
# checkOverlaps
# maxStepFactor
# nSegmentsPerCircle
# vacuumSolid
# beamPipeSolid
# containerSolid
# containerSubtractionSolid
# vacuumLV
# beamPipeLV
# containerLV
```

```
+ CreateBeamPipe()
+ CreateBeamPipeAngledIn()
+ CreateBeamPipeAngledOut()
+ CreateBeamPipeAngledInOut()
# BDSBeamPipeFactoryBase()
# CleanUp()
# CommonConstruction()
# BuildBeamPipeAndRegisterVolumes()
# CalculateFaces()
# TestInputParameters()
# BuildLogicalVolumes()
# SetVisAttributes()
# SetUserLimits()
# PlaceComponents()
```



## BDSBeamPipeFactoryLHCDetailed

```
- copperSkinSolid
- screenSolid
- coolingPipeSolid
- copperSkinLV
- screenLV
- coolingPipeLV
- coldBoreThickness
- coolingPipeThickness
- coolingPipeRadius
- copperSkinThickness
- vacRadius
- vacBoxX
- vacBoxY
- cuInnerRadius
- cuInnerBoxX
- cuInnerBoxY
- cuOuterRadius
- cuOuterBoxX
- cuOuterBoxY
- bsInnerRadius
- bsInnerBoxX
- bsInnerBoxY
- bsOuterRadius
- bsOuterBoxX
- bsOuterBoxY
- cbInnerRadius
- cbOuterRadius
- containerRadius
- vacHalfLength
- halfLength
- coolingPipeYOffset
- _instance
```

```
+ ~BDSBeamPipeFactoryLHCDetailed()
+ GetFullWidthOfCoolingPipe()
+ CleanUp()
+ CreateBeamPipe()
+ CreateBeamPipeAngledInOut()
+ Instance()
- BDSBeamPipeFactoryLHCDetailed()
- TestInputParameters()
- CommonFinalConstruction()
- CreateGeneralAngledSolids()
- BuildLogicalVolumes()
- SetVisAttributes()
- SetUserLimits()
- PlaceComponents()
- InitialiseGeometricalParameters()
- CalculateGeometricalParameters()
```