“The GTSTRUDL Base Plate Wizard”

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Abstract

The GTSTRUDL Base Plate Wizard is designed to facilitate the modeling and analysis of base plates. Based on user specifications, a GTSTRUDL input file is created containing a finite element model of the base plate and attachments using SBHQ6 and SBHT6 (if necessary) elements, boundary conditions including anchors and bearing surface, and loadings. Dialogs are provided to specify:

Plate:	Size and material properties, finite element mesh size
Attachments:	Number, type, location and rotation of attachments. Hot rolled shapes may be selected from a list or attachments may be user defined by line segments. Attachments may be modeled as RIGID SOLID footprints in the plane of the plate or extended from the surface of the plate as an SHBQ6 element model.
Anchors:	Number, type, location and properties of anchors. Location may be set by using a pattern and/or individually specified. Anchors may be nonlinear and may be modeled as springs or members.
Bearing Surface:	Concrete f_c', E or K of the bearing surface with an optional gap between the base plate and bearing surface.
Stiffeners:	Number and location of stiffeners.
Constraints:	“Constraints” are a specification of finite element node locations, either by single point or line of nodes to facilitate meshing the base plate with another model. In addition, “Constrained” nodes may have boundary conditions applied.