

#1346: OptiStruct – Enhanced FSTOSZ functionality for Composites Optimization

Product: OptiStruct

Product Version: OptiStruct 2017.2.2 & HyperMesh 2017.3 or above

Topic Objective

Enhanced FSTOSZ functionality for composites optimization with OptiStruct.

Topic Detail

Detection and handling of disconnected patches

- Additional plies are generated for groups of elements that are not connected to each other, as such plies would be laid separately
- Large number of plies may be created, but this is countered by the automated grouping since patches have a minimum size

Detection and elimination of small patches

- Further cleans up the interpreted design – disabled by default since it may adversely affect the performance of the optimized design

Special treatment when discrete optimization is active

- Individual plies are generated for each thickness step, instead of splitting each ply into a predefined number of ply bundles

O U T P U T	KEYWORD	FREQ	[BUNDLES]	METHOD	IGNORE
	FSTOSZ		4	ADVMAN	

Bundles

Specifies the number of ply bundles to be generated per fiber orientation.

Method

Ply bundle thicknesses are determined based on the method defined.

ADVFREE

Advanced algorithm with free thicknesses.

ADVMAN

Advanced algorithm with manufacturable thicknesses.

SIMFREE

Simple algorithm with free thicknesses.

SIMMAN

Simple algorithm with manufacturable thicknesses.

The advanced algorithm is available for 2, 4 and 8 ply bundles. It takes into account the thickness distribution when generating the ply bundles, which results in a more accurate representation of the original free-sized thickness profile. Ply bundle thickness can also be multiples of the manufacturable ply thickness. **Ignore:** Elements may be ignored in a given ply orientation when their thickness is less than 5% of the maximum thickness. This option is inactive by default