

DESIGN GUIDE

Dispal[®] S220 AM and DISPAL[®] S260 AM

Introduction

The information in this document should be considered as a rough starting guide. Every application is different, and it should be evaluated individually from a Gränges application expert before manufacturing.

Component overall size

Please note that small changes in the overall dimension of the component will not make a big difference if cross sections are kept slim (info regarding cross sections in table 2). Use these measurements as a reference only.

Table 1 nomenclature and component overall size references

Component size	Size in mm
Small	50*50*50
Medium	between 50*50*50 and 200*200*200
Large	above 200*200*200

Small and Medium sized components are the best suited for DISPAL AM material. Larger components may require adjustment in the design for preventing the formation of cracks. If reducing the size of the component is not possible, consider reducing the thickness of cross sections.

Large components should be evaluated on an individual basis. Different rules may apply. Please contact us directly for an assessment.

Table 2 Detailed design guidelines

Recommended cross sections	<ul style="list-style-type: none"> No thicker than 35 to 40mm on a medium – or large – component
Minimum wall thickness (unsupported)	<ul style="list-style-type: none"> 0.3 mm Not recommended for structural features
Minimum wall thickness (structural)	<ul style="list-style-type: none"> We recommend 2 mm for structural features and walls Smaller features should be evaluated based on the design
Minimum pin Ø	<ul style="list-style-type: none"> 0.6
Minimum hole size	<ul style="list-style-type: none"> 2 mm We recommend drilling holes with matching surfaces afterwards, to ensure tolerances
Channels	<ul style="list-style-type: none"> The longer the channels, the wider the holes should be to allow powder removal and evt. post processing
Threads	<ul style="list-style-type: none"> We recommend cutting the threads afterwards, as a post processing operation. If desired, marking the location with a small spot in the design it's a possibility.
Mitigate stress concentration	<ul style="list-style-type: none"> Avoid sharp corners Round off or fillet the edges with at least 3mm radius Avoid also sharp changes in cross section
Surface finish	<ul style="list-style-type: none"> 50 µm layer thickness has an average Ra value of 8µm – further surface optimization possible Thicker processing layers and down-skins will have a rougher surface