Project Definition Information Sheet

(DISA Casting)

The objective of our MAGMAproject is to help you solve your casting defects issues, optimize your casting process and find a robust solution that fits to your needs. Using MAGMASOFT® & the related modules, we are going well beyond solidification modeling. We can compile and document step-by-step improvements and potential solutions - from a simple solidification simulation, to a full factorial design of experiments (DoE) or an autonomous optimization of your casting process using our well proven MAGMA APPROACH.

MAGMASOFT® is capable of considering many variables. In order to obtain the best results for your project, a detailed process description is required to fill up in this information sheet. If the exact values are not available, please estimate them closely. Please prepare the CAD file in .stl / .stp format for each component respectively and use the common coordinate system when you export from an assembly model. Please provide as cast model but if only machined model is available, please specify all the machined surfaces and drilled holes.

We will contact you shortly prior to starting the project to confirm these parameters.

Contact Name	
Company	
Phone No	
Email address	
Project name	
MAGMA Representative	

Objective of the project:

Part 1: Project Details

Please ☒ the appropriate box

Project name / Part number		
Drawing	☐ Yes	☐ No
Unit	☐ mm	☐ inch
Prepare solid CAD in single co-ordinate based on your purchased interface reader	☐ STL ☐ Step	
Please prepare the CAD file in .stl / .stp format for each component respectively		

Remarks:

Core	☐ Yes	☐ No	
Pouring Basin	☐ Yes	☐ No	
Runner	☐ Yes	☐ No	
Gate1 Gate2 etc.	☐ Yes	☐ No	
Chill	☐ Yes	☐ No	
Feederneck	☐ Yes	☐ No	
Feeder	☐ Yes	☐ No	
Filter	☐ Yes	☐ No	
Casting	☐ Yes	☐ No	

Any other comments:

Part 2: Process Information

Please ⊠ the appropriate box

Cast Material		
Chemistry Composition (Final – after treatment)	Carbon	%
	Silicon	%
	Manganese	%
	Phosphurus	%
	Sulfur	%
	Chromium	%
	Copper	%
	Tin	%
	Magnesium	%
	Molybdenum	%
	Nickel	%
	Cerium	%
	Antimony	%
	Nitrogen	ppm
Mold or Shell Material		
Core Material (Sand and binder? Are the cores hollow?)		
Sand Properties	Temperature, Moisture Content Permeability	°C %
Chill Material		
Filter Manufacturer and specification	☐ Foam ☐ Sieve Size	ppi, cell
Anticipated or actual nodule count (ductile iron) or Eutectic cell size (gray iron)		

Inoculation (method and inoculants)	
Critical mechanical properties (requirements versus actual i.e., hardness, tensile strength, elongation, etc.)	
DISA model	
Mold dimension (width x height x thickness)	W: ☐ mm ☐ inch H: ☐ mm ☐ inch T: ☐ mm ☐ inch
Molding rate (molds/hour)	
Cycle time	sec
Cooling conveyor length	☐ meters ☐ feet
Cooling time (Time span during which the casting is in the cooling drum or conveyer belt)	sec
Pouring temperature	℃
Pouring time or pouring rate (if neither is available, please contact MAGMA)	☐ sec ☐ m/s
a) Nozzle diameter b) distance between top mold and nozzle	a) mm b) mm

Part 3: Additional Process Information
Please ☒ the appropriate box

Is there anything we should know about your process?	
Do you use special sand (i.e. Zircon or Chromite) in certain areas of the mold?	

Part 4: Casting Production Information

Please ☒ the appropriate box

How many of this casting are produced in a typical run?	
How frequent is the problem occurring?	
How many do you produce annually?	
What is the scrap rate on this casting per series and annually?	

Please email the completed form and CAD file to us at project@magmasoft.com.sg or call us at +65 6564 3435 if you need assistance to complete the submission.

In addition, please feel free to share with us if you have the casting results, pictures of casting defects, microstructure or other technical information that you think might be helpful to kick start the project.

You may use MAGMA's upload/download tool for big file size upload thru our website (customer support section): https://www.magmasoft.com.sg/en/support/intro/

Note that you would need to register an account before you could access to the feature: https://www.magmasoft.com.sg/en/support/registration/

Please feel free to contact us should you have any queries.

Last updated on September 2019