

Check List for Defining Surface Engineering Requirements

Print this page and try to fill in as much of the information as you can. It will assist in defining your problems and requirements and lead to the optimum surface engineering solution.

Which of the categories below best describes your component and its function?

Category	Options	Your Component
Component name	Make it descriptive	
Function	Is it rolling, sliding, in static contact, etc.	
Base material	Low carbon steel, medium carbon steel, alloy steel, al alloy, etc.	
Fabrication method	Cast, machined, ground, etc.	
Heat-treatment	The temperature which you don't want to exceed when surface engineering	
Environment	Is it saline, oxidising, caustic etc.	
Lubrication	Is it oiled or greased	
Operating temperature	The maximum its likely to see	
Counterface material	It could be another engineering part or it could be a product	
Counterface hardness	If it's an engineering part, how hard is it?	
Abrasivity of product	If the contact is against a product, does it have a hard filler or abrasive nature. How hard?	
Corrosively of product	Salt water, acid, etc.	
Mode of degradation	What is dominant? Wear, corrosion, fatigue, etc.	
Your basic requirement	Low wear? Low friction? Anti corrosion? etc.	
The load	The maximum value	
The likely contact area	Is it over a large area or concentrated?	
The specific load	Divide the load by the area	
Contact conditions	Impact, cyclic loading, static loading, or just sliding?	
Hardness	How hard do you want the surface to be?	
Surface finish	Your required finished value	
Finishing constraints	Can you post-finish after surface treatment? What dimensions are critical?	
Thickness	How thick do you want the coating or case? It will depend on the load	
Coverage	Where must it be coated or treated? Are there any holes or inaccessible features?	
Size and weight	The longest dimension	
Approvals	Defence? Food approval?	