Department of Mechanical and Aerospace Engineering, IITH

Industry Lectures

Steels used for Automotive industry

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This presentation briefly describes about the flat steel from which the components are made by cold forming (either bending, stretch forming or drawing). Flat steels are broadly classified as HR (hot rolled) and CR (cold rolled). For BIW exterior applications coated steels grades such as GA (Galavannealed) steels are used. For some specific applications AL-Si coated steels are used. Bullet proof grades used for vehicles in Defence and wear resistance grades used for dumper applications are also discussed. Long steel grades from which the components are made by hot forming, hart treatment, machining and final grinding. For all the components primary function and the material properties required for performing the same is also discussed. Various characterization and testing methods such as tensile testing, hardness, fatigue of both LCF (Low cycle fatigue and HCF (High cycle fatigue) also discussed. Fatigue testing is component specific and selection and recommendation of fatigue testing based on component is also discussed.

About the speaker

- Doctor of Philosophy in Metallurgical and Materials Engineering from NIT Trichy
- Post Graduate (M. Tech) in Metallurgical and Materials Engineering from IIT Madras.
- Experience of 16.5 years in different profiles which includes Process Engineering, Foundry, Materials Engineering, Heat Treatment in 4 different automotive companies (Amara Raja Batteries, GKN Driveline, Hyundai Motors, Ashok Leyland.)
- Currently working as “Senior Manager Materials Engineering in Ashok Leyland
- Automotive steel Expert
- Analyzed about 500 unique metallurgical failures in both Car and Truck components
- Published international papers in 2 reputed journals