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- 1) Main body material is Steel 4130 20 mm plate (24 for extended version)
- 2) Tube ends and spherical bearing housing are Steel 4130
- 3) Welding assembly is welded together in a jig using GTAW welding method and meet EN ISO 13920-B for tolerances and EN ISO 5817-C for quality
- 4) Rod ends used have Steel 45 body, GGr15-GB/T18254 inner ball, H62 outer ring and PTFE lining for lubrication. Load capacity: Cr= 45kN, Cor=96kN
- 5) Spherical bearing uses Steel 52100 inner ball and 25CrMo4 heat treated race with PTFE lining for lubrication. Ultimate radial static load: 142kN
- 6) Ball joint shank is Steel 42Crmo4
- 7) All hardware is zinc coated for corrosion prevention and ball joint nuts are locking type

Design process involves calculating loads at different suspension mounting points during cornering and braking scenarios and applying them to design models using Finite Element Analyses and the topology is optimised to meet minimum 4x safety margin for material stress.



Figure 1. GKtech S-chassis front lower a-arm lock bar