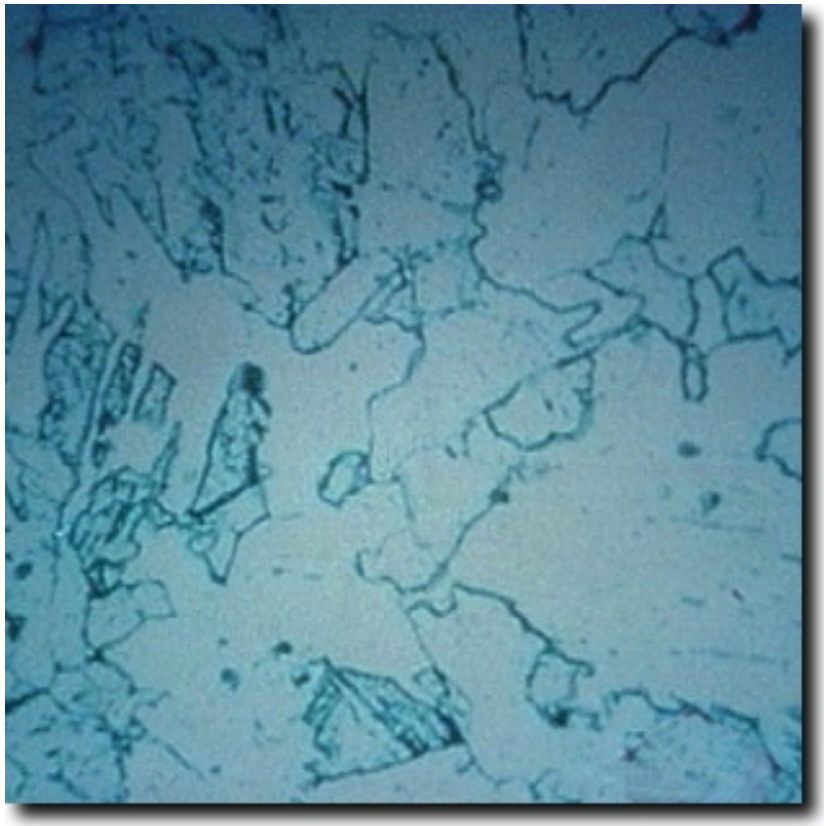
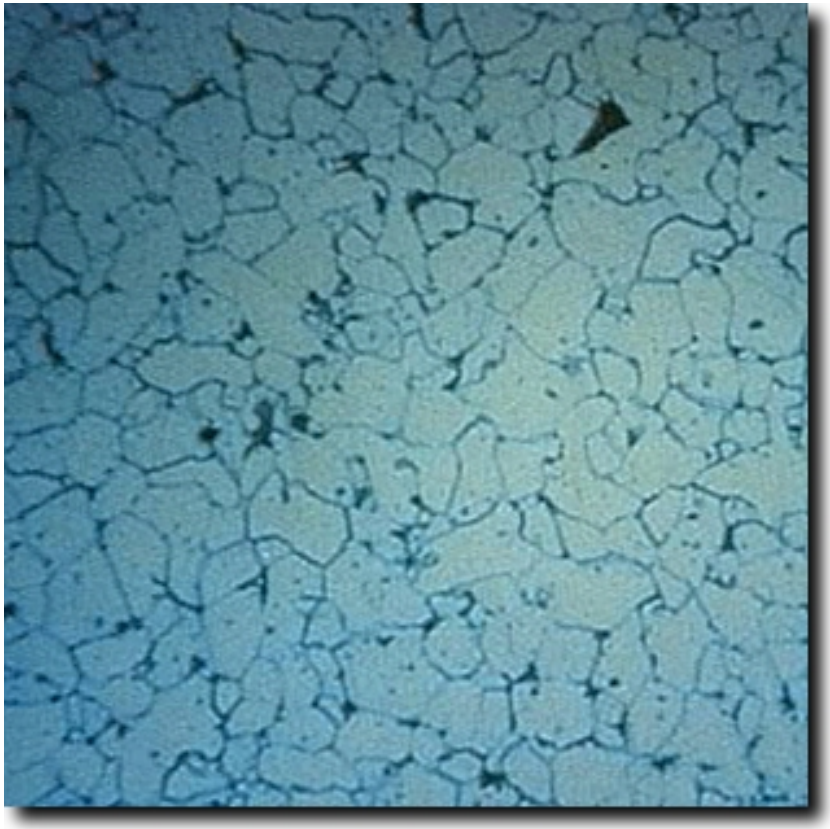
Mild Steel



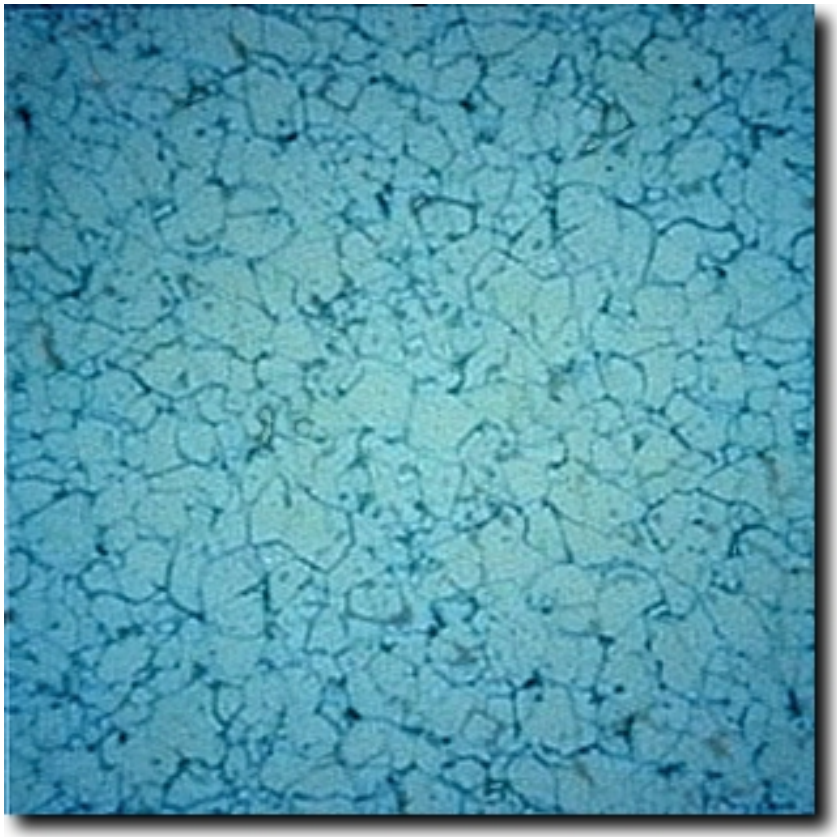
- Easily formed
- Easy to work
- Used for structural parts
- Increase in strength when formed
- Less sensitive to heat

High-Strength Steel (HSS)



- Higher strength
- Heat sensitive
- Straightened cold
- Used for load-carrying parts
- Used in thinner gauges
- Can be HSLA

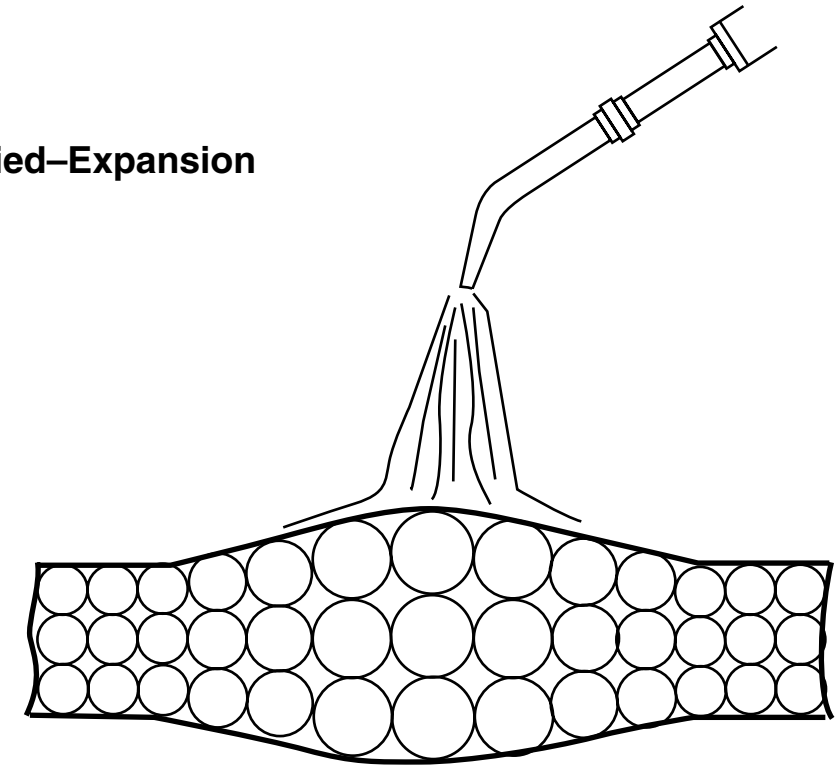
Ultra High-Strength Steel (UHSS)



- Intrusion beams and bumper reinforcements
- Strength destroyed by heat
- Typically not straightened
- Usually replaced if damaged

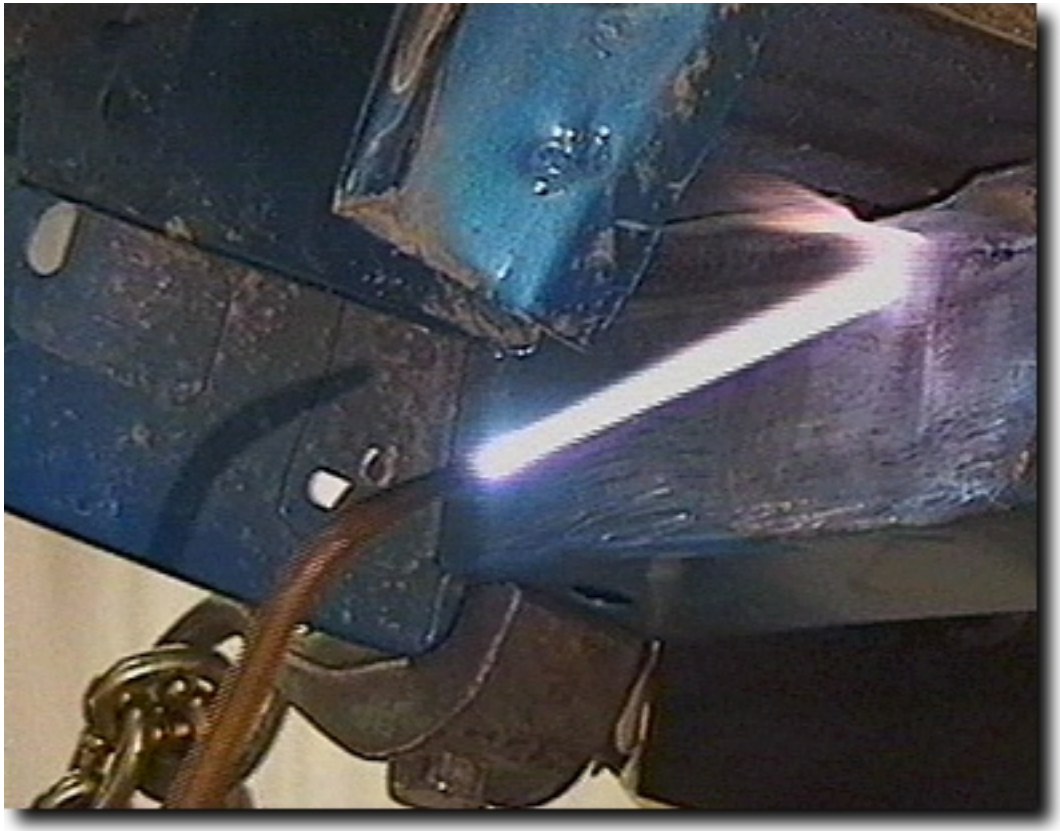
OEM Recommendations For Heat Use

Heat Applied–Expansion



- Most recommend cold straightening
- Heat is typically used as a last resort
- Check for guidelines when heating steel

Heat For Stress Relieving

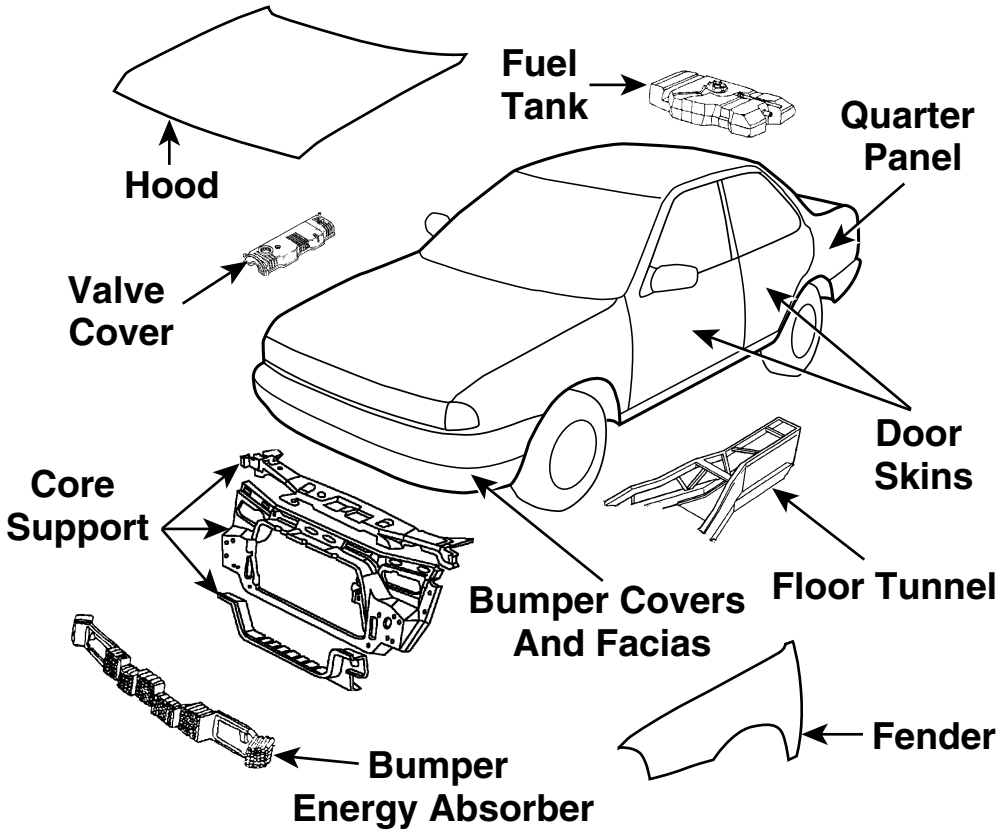


- Check recommendations
- If heat is allowed, follow temperature and time recommendations
- Heating time is cumulative

Temperature Indicators

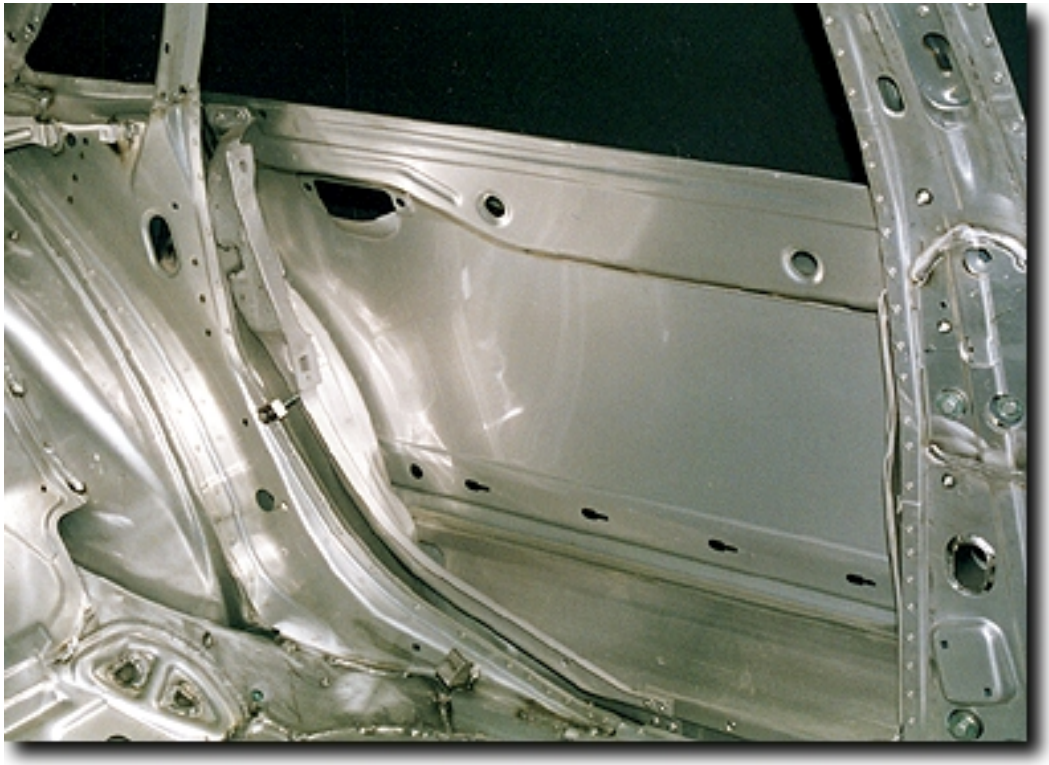
- Determine temperature of part being heated
- Are available in a variety of types and temperature ranges

Plastic



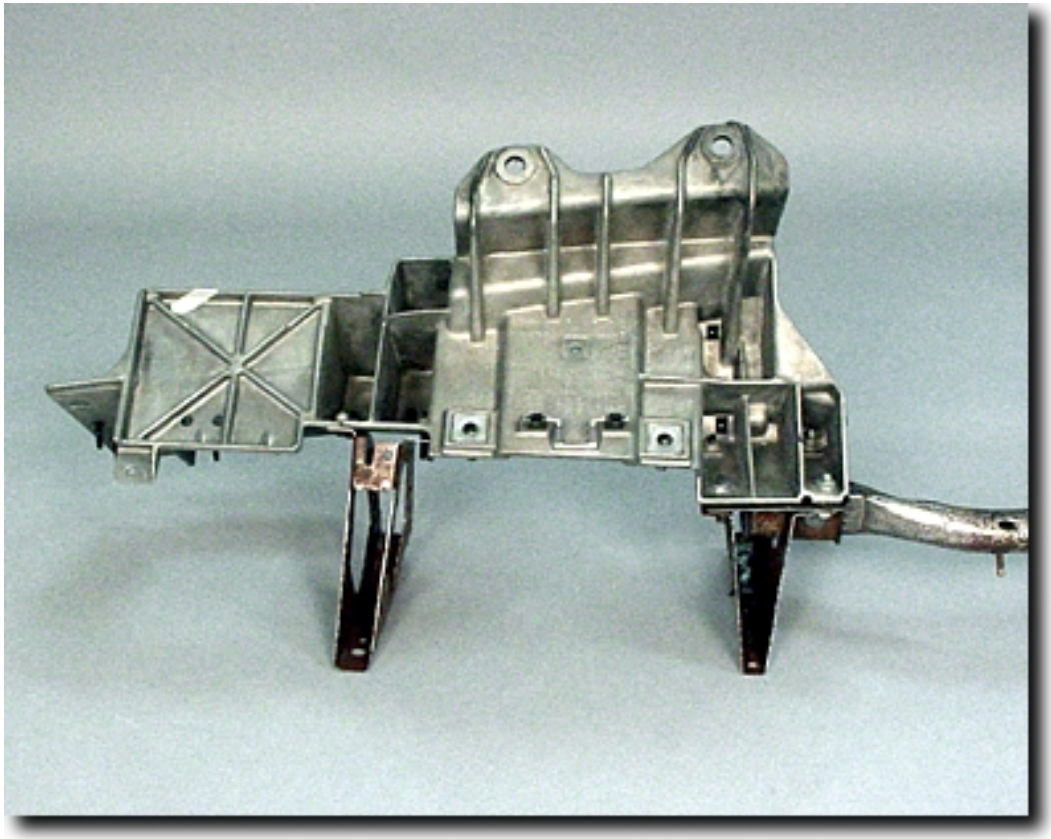
- Increased use
- Used in structural and non-structural parts
- Special repair techniques

Aluminum



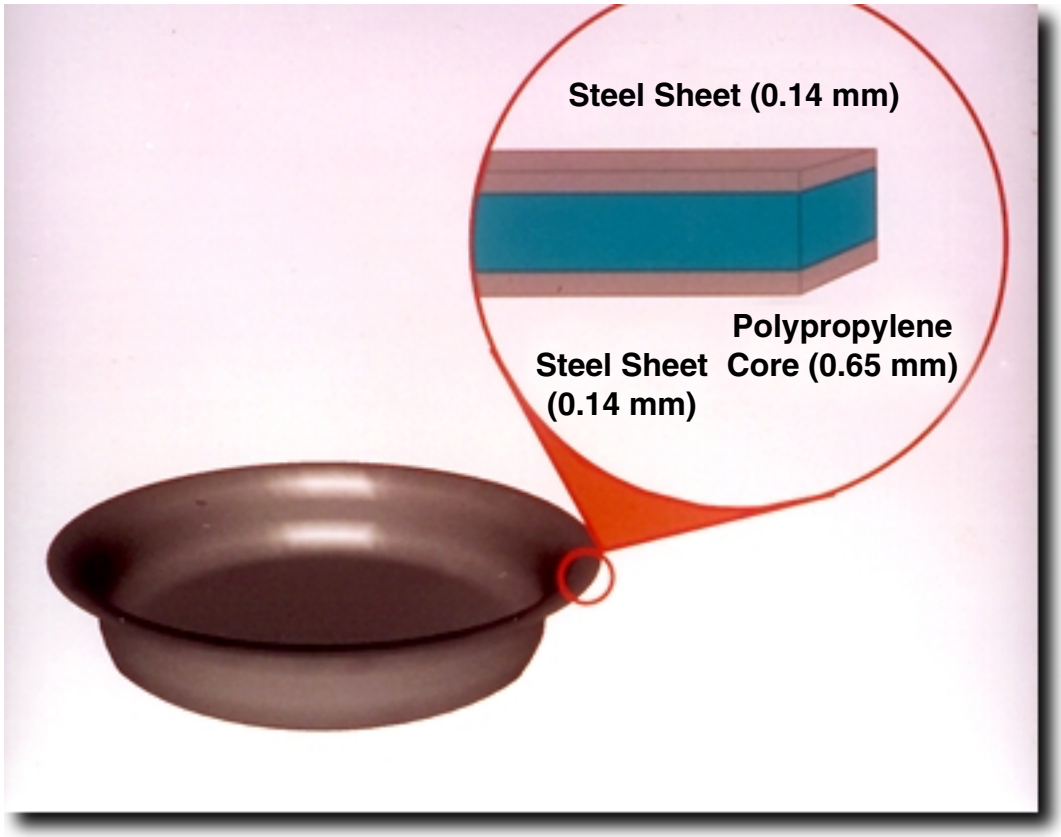
- Structural and non-structural parts
- Sheet metal, extrusions, and castings
- Varies in strength
- Must know type for welding

Magnesium



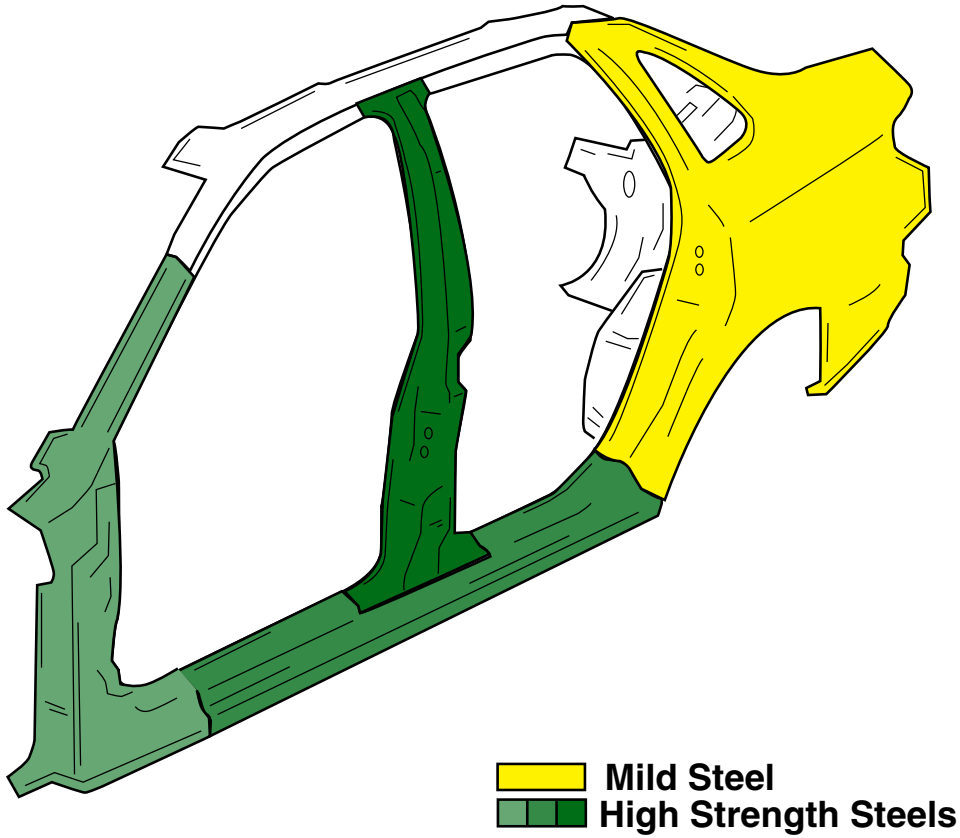
- Used where weight must be reduced and strength maintained
- Difficult to repair
- Typically replaced if damaged

Ultra-Light Steel Autobody



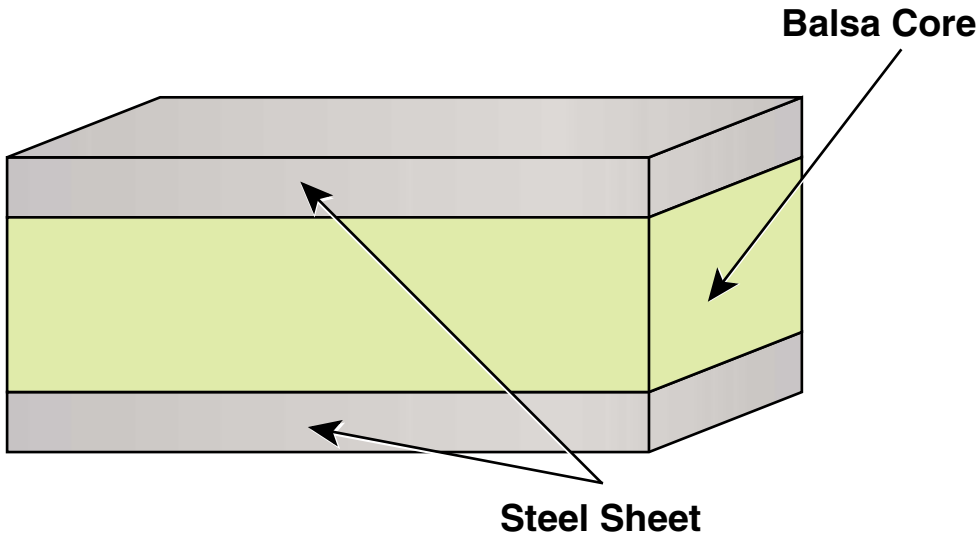
- Tailor-welded blanks
- Steel sandwiched parts

Tailor-Welded Blanks



- Different strengths and thicknesses of steel
- Laser welded
- Reduces number of flanges and spot welds
- Used on some late model vehicles

Steel Sandwich



- Polypropylene core between two steel skins
- Reduces weight up to 50%