



Ductile Cast Iron



Gray Cast Iron

The dark appearing microstructure shown in both images above are hard brittle compound Fe_3C (cementite). Essentially, these are internal stress concentrations. When cast iron is fatigue tested, cracks originate at these stress concentrations. If we were to create a macroscopic stress concentration such as a hole or notch, essentially, we are not affecting the fatigue behavior as much as we would with other microstructures (microstructures that do not have these inherent stress concentrations). Because they already have microscopic “notches”, cast irons have low “macroscopic” notch sensitivity.