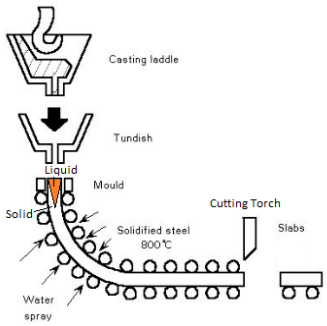
AME1: Ductility trough characterization: phase III
Sponsor: ArcelorMittal



Project Description: Primary steel production utilizes continuous casting, in which molted iron from the blast furnace is cast into thick slabs. These cast slabs are rolled down to wrought steel sheet and bar products. Advanced steels present new challenges to this established process. Recently, ArcelorMittal's Indiana Harbor facility has had a demand for several low carbon steels, but during continuous casting they develop corner cracks leading to unusable product or expensive crack elimination procedures. ArcelorMittal will supply the team with a variety of continuously cast steel alloys from which tensile specimens will be machined to quantify the mechanical behavior of the steel over the range of temperatures experienced (700-1000°C) during bending and unbending after continuous casting. Differences in composition and microstructure will be utilized to determine the root cause of corner cracking. Last year's team made great progress and will publish their work in a steel industry journal. ArcelorMittal was impressed with the progress and would like more alloys tested.