

研究论文

退火时间对0.15\%P铸轧耐候钢冷轧薄带组织性能的影响

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摘要: 使用双辊薄带铸轧机制备磷含量(质量分数)高达0.15%的耐候钢薄带, 研究了退火时间对其组织性能的影响。结果表明, 退火时间为40 min时, 可获得细小的铁素体+珠光体组织。在本文的退火时间内耐候钢薄带的屈服比均小于0.8, 加工硬化指数均大于0.2。随着退火时间的延长, 其抗拉强度呈缓慢下降趋势, 屈服强度先下降后基本保持不变。明确了局部出现细晶组织的原因。

关键词: 金属材料 退火 铸轧薄带 高磷耐候钢 碳化物 组织性能

Effects of Annealing Time on Microstructure and Mechanical Properties of Continuous Casting Weathering Steel Containing 0.15% P Thin Cold-rolled Strip

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Abstract: The weathering strip containing 0.15%P was prepared by using a pilot twin-roll strip caster. The effect of annealing time on microstructure and mechanical properties of the continuous casting weathering steel after cold rolling was investigated. The results show that after annealing for 40 min the fine ferrite and pearlite structure can be gained and all of yield ratios are less than 0.8 and all of strain hardening exponents are higher than 0.2 during the annealing times which were investigated in the paper. Tensile strength gradually declines and yield strength firstly descends and basically remains invariant subsequently with annealing time increasing. The reason that fine grain structure can be observed in localized area was discussed.

Keywords: metallic materials annealing cast strip high phosphorus weathering steel carbides microstructure and mechanical properties

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