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Welding Certification and Standards: Ensuring Quality and Reliability in Fabrication

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Abstract: *This research delves into the pivotal significance of welding certification and adherence to standards in upholding the quality and dependability of fabrication processes. Employing a qualitative approach, comprehensive interviews were conducted with 30 welding experts, engineers, and quality assurance personnel. Thematic analysis revealed vital insights, spotlighting the importance of certification, encountered challenges, observed benefits, and the impact of standards. Participants emphasized the essential role of welding certification in validating welder competency and credibility, while also discussing hurdles like uneven recognition and the need for ongoing updates. The advantages of welding certification were evident in elevated weld quality, decreased defects, and heightened safety. Adherence to standards emerged as pivotal in ensuring uniformity, dependability, and consistent quality. These findings not only resonate with existing literature but also underscore the industry's dedication to optimizing welding practices. Through addressing challenges and capitalizing on benefits, stakeholders can collectively elevate welding practices, nurture welder competence, and amplify the overall quality and reliability of fabricated structures. This study contributes indispensable insights to professionals, policymakers, and stakeholders, affirming the indispensable role of welding certification and standards in achieving enduring, credible, and secure welded structures.*

Keywords: welding certification, standards adherence, fabrication quality

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