

3D-Characterisation of Sheet Metal and Roller Surfaces by Means of Confocal Microscopy

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Abstract. The measurement and evaluation of sheet metal *surface characteristics* is of increasing importance, due to the significant functional impact on finishing processes like *forming* and *varnishing*. For a comprehensive and useful description of textured topographies including non-statistical characteristics, a simple profile evaluation based on 2D roughness parameters is no longer sufficient. The introduction of area-imaging white light confocal microscopy offers, in contrast to tactile profiling methods of comparable accuracy, the clear advantage of *contact-free* and extremely fast 3D data capture. The capabilities and benefits of this technology in interaction with sophisticated 3D area analysis methods are demonstrated by measurement examples of sheet metal and roller surfaces. A newly-developed *mobile* confocal measurement system for direct roller measurements is introduced.