A Review on Abrasive Water Jet Cutting - DTU Orbit (16/12/2018)

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The development of high performance material such as composites and advanced ceramics has a variety of manufacturing challenges. It is known that many of these materials cannot be effectively machined by conventional machining methods. Apart from economics, the process selection is based on the machined surface integrity. The high pressure waterjet with abrasive additives known as abrasive water jet (AWJ) is one viable alternative to conventional processing and has been suggested for use in post mold shaping of composites and other hard to cut material. The research works on water jet cutting is discussed in this paper. Omni directional cutting potential as well as minimal thermal and mechanical loading are few advantages. There are several parameters influencing the performance of abrasive water jet machining. Important process parameters which mainly affect the quality of cutting are traverse speed, hydraulic pressure, abrasive flow rate, standoff distance, and abrasive type, work material. Material removal rate (MRR) and surface roughness (Ra), taper of cut, width of cut are important quality parameters of AWJM.

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