UNDERGROUND SUPPORT LINERS AND WORK OF ADHESION

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Summary. Thin spray-on liners (TSL) are relatively thin (2-5mm), fast setting liner materials that are used to spray onto rock surface to support mining excavations. The majority of current TSL’s are two part polyurethane/polyurea, methacrylate or cement based latex products that are mixed on site before pumping on surface. The interface property known as work of adhesion incorporates both adhesion and effective bond width which are two important design parameters for TSL support design. The value of this parameter is yet to be recognized by mining industry and liner manufacturers. The importance of this parameter is introduced in this study. A new methodology using pull out load-displacement data was developed to calculate the work of adhesion between a TSL and a substrate. Tests were performed using Tekflex as a liner material, which was applied to concrete, granite or sandstone substrates. It was found that Tekflex liner when sprayed on substrates will likely have work of adhesion values around 777 to 973 N/m.