

LAPPING AND SUPERFINISHING EFFECTS

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1. EXTENDED ABSTRACT

Despite the fact that lapping was expected to improve surface finish, measurement results show that gear surface finish becomes worse after lapping while no consistent results for pinion surface finish were observed. In addition, it can be seen that lapping decreases surface finish variation among gear sets.

However, it was shown that lapping decreased the first three harmonics of transmission errors for both drive and coast sides. Also, further studies need to be done to check the effects of lapping on higher harmonics. Moreover, this paper presented the effects of the superfinishing process on hypoid gears set surface finish and transmission errors. This study shows the result of measurements taken before and after superfinishing.

Although superfinishing improves surface finish drastically it was shown that surface finish quality achieved by the superfinishing process considerably decreased when gear sets were rolled together. Moreover the results for single flank testing showed that superfinishing also do not have any considerable and consistent effect on transmission errors.

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