Conclusion

HVOF coatings show on one hand significantly higher dry wear resistance than HVAF coatings, owing to the presence of coarser primary carbides from the initial coarser powder cut. HVAF coatings exhibit lower porosity and finer well-distributed primary carbides, which on the other hand are expected to improve coatings sliding wear performances (Ref 19, 20), while performing for instance the intended ASTM G77. Respective wear mechanisms sollicited in those different tests are to be investigated in the future, in order to highlight the fact that there is a strong effect of the used wear test on the wear behaviour, and thus depending on the targeted application. Further work will investigate the critical role of CGS, CC and MFP respective weighted distributions on the oxidation and corrosive resistance of HVAF-sprayed coatings.

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