

Assessment of the coherence of dry fibres by scratch test: Samples from Eric Robert Themmen, Gruppo Biokimica, November 24th 2020



Method

The gradual disintegration or powdering of the leather fibres is observable in a small sample of fibres scratched off from the flesh side with the tip of a scalpel:



The fibres from vegetable tanned leathers can be categorized into five progressive states of powdering due to chemical breakdown (Larsen et al. 1996, Larsen et al. 2011, Warming et al. 2020):

1. Very coherent
2. Coherent and slightly powdered
3. Equal parts coherent and powdered
4. Slightly coherent and powdered
5. Completely powdered



1.



2.



3.



4.



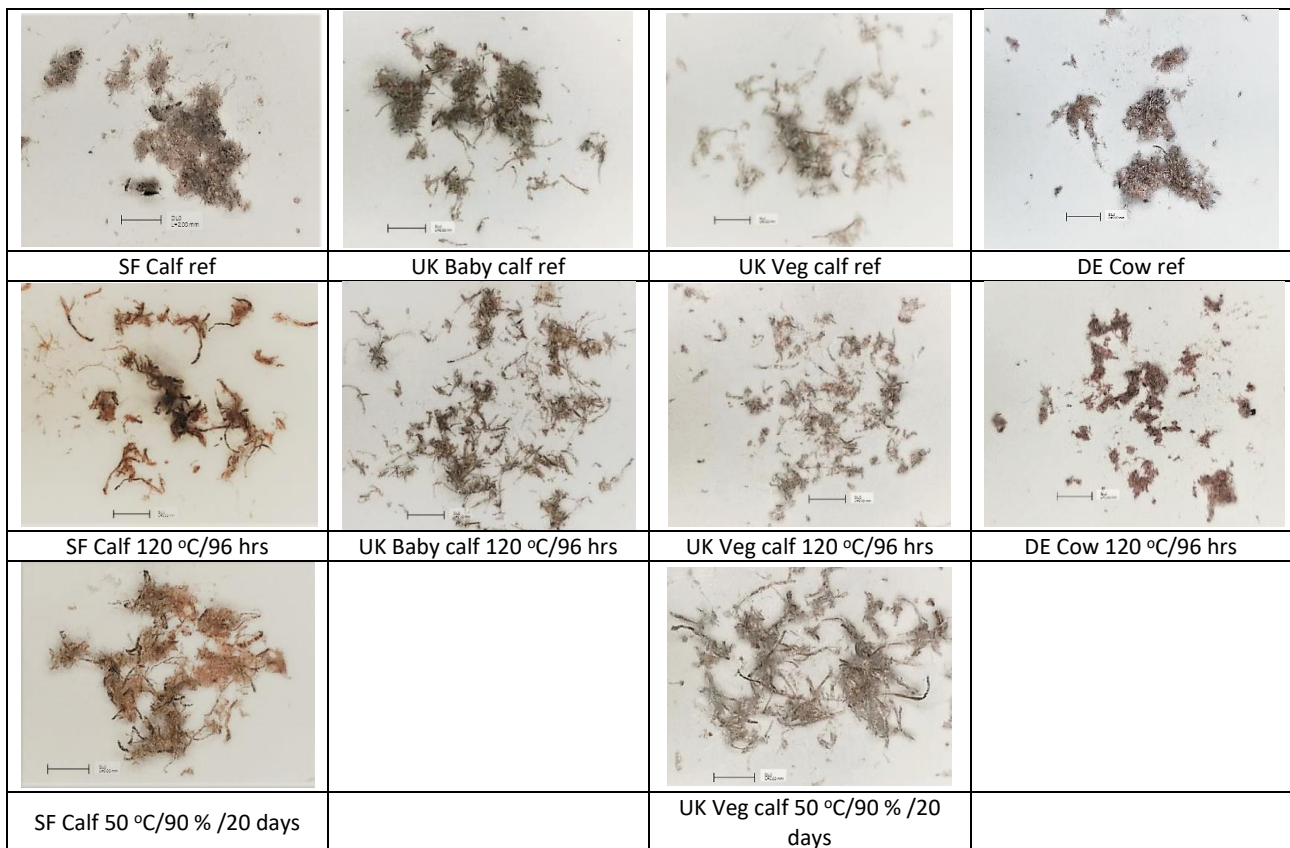
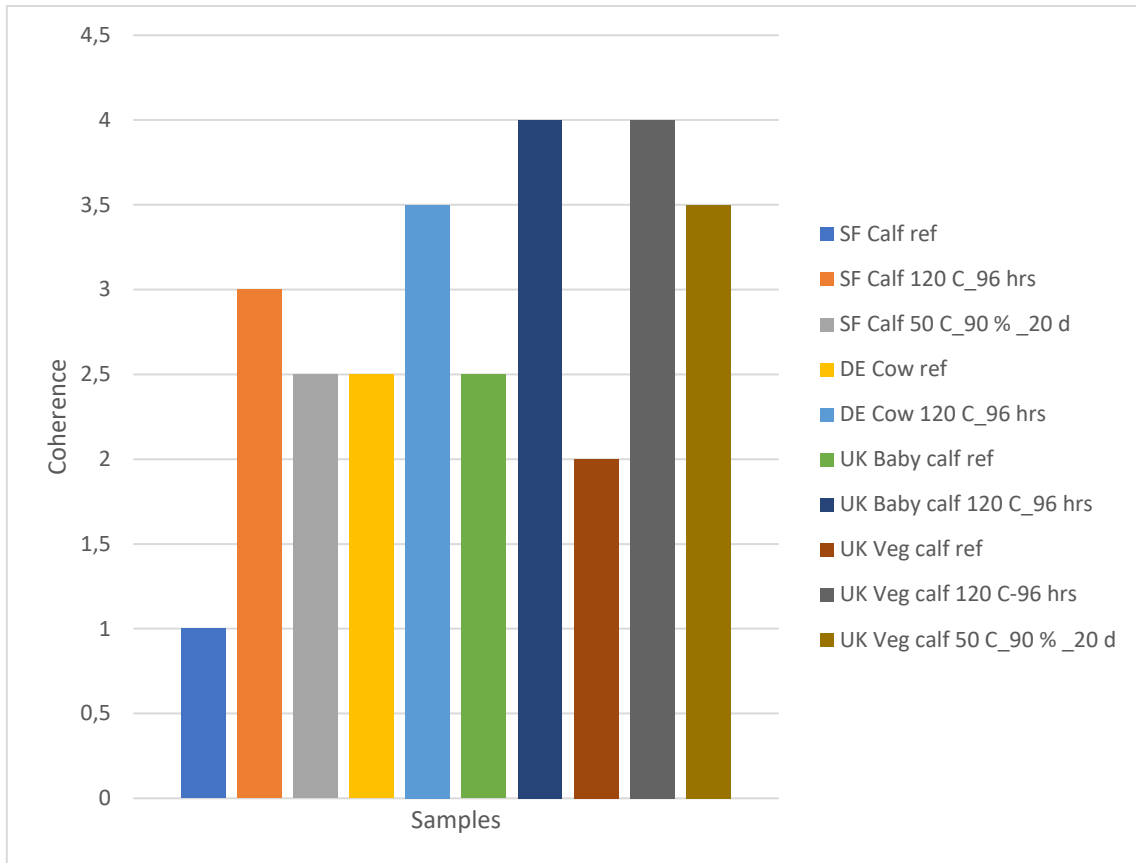
5.

Samples judged to be placed between two categories are added 0.5 to the score.

Results

The results of the categorisation of the reference samples, samples after accelerated ageing at 120° C for 96 hours and samples after accelerated ageing at 50 °C, 90 % RH for 20 days are shown in the table and figures below. In all cases the SF calf gets the best score.

Sample	Coherence	Remarks
SF Calf ref	1	Very difficult to scratch
SF Calf 120 °C/96 hrs	3	Difficult to scratch
SF Calf 50 °C/90 % /20 days	2,5	Difficult to scratch
DE Cow ref	2,5	Easy to scratch
DE Cow 120 °C/96 hrs	3,5	Less easy to scratch
UK Baby calf ref	2,5	Easy to scratch
UK Baby calf 120 °C/96 hrs	4,0	Easy to scratch
UK Veg calf ref	2	Easy to scratch
UK Veg calf 120 °C/96 hrs	4,0	Less easy to scratch
UK Veg calf 50 °C/90 % /20 days	3,5	Easy to scratch



References

R. Larsen, M. Vest, D.V. Poulsen and U.B. Kejser. ENVIRONMENT Leather Project. Deterioration and Conservation of Vegetable Tanned Leathers. European Commission, Protection and Conservation of the European Cultural Heritage. Research Report 6 (Copenhagen 1996), 145-166.

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