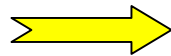


**Physical ageing by heat
(degradation of mech. properties)**

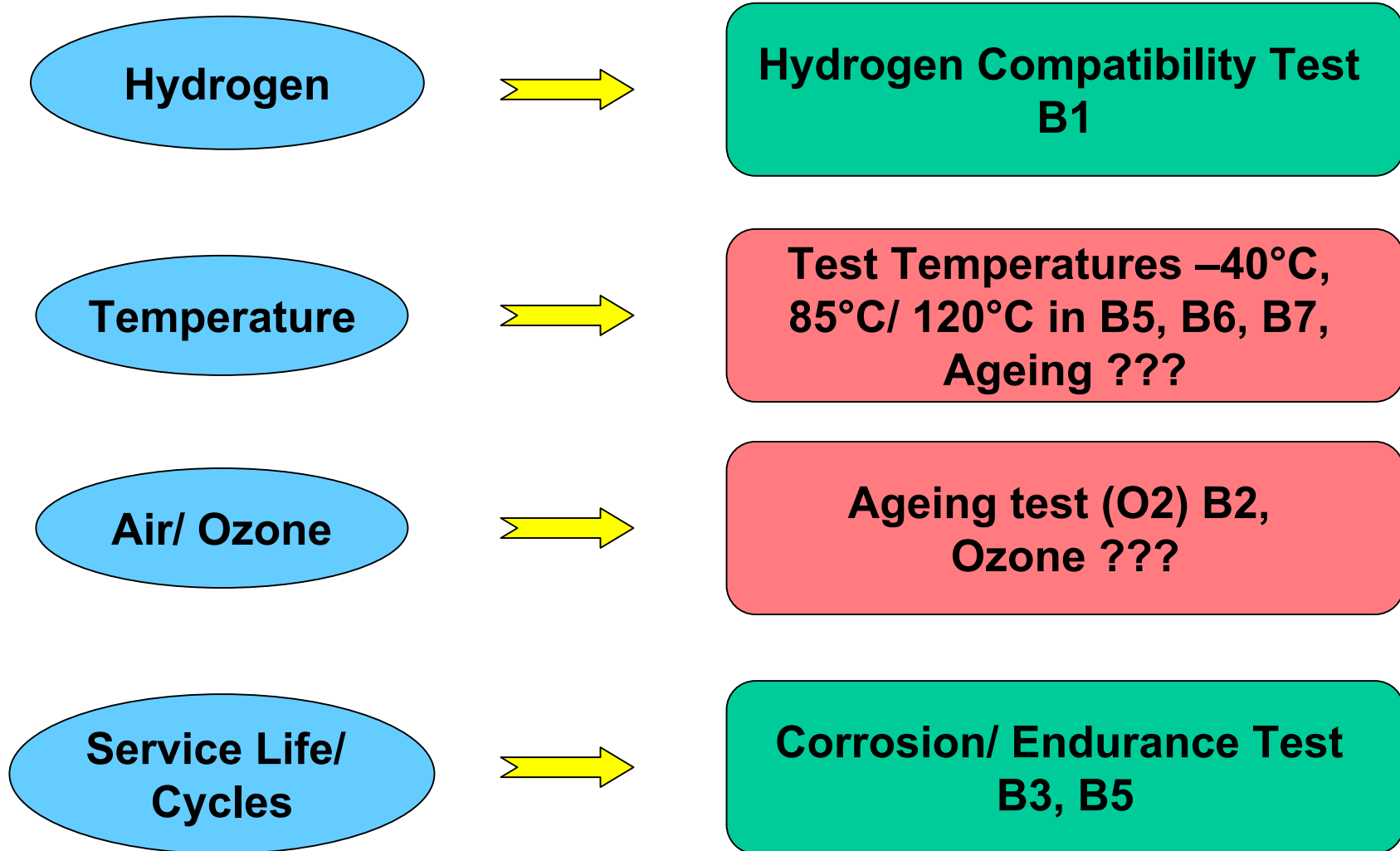


**Chemical ageing by air/ ozone
(breaking of polymer structure)**

Note: +10°C => ageing accelerated by factor 2
never test more than 30°C over service temperature

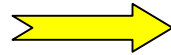
Ozone Test in ECE R 110 is not extreme

Ageing by O₂ or ozone by different processes



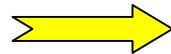
What's missing?

Temperature

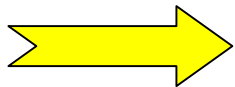


**Verification of stability
regarding temperature**

Air/ Ozone



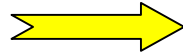
**Verification of suitability for
Ozone**



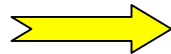
**A) Check mechanical properties after ageing by heat
B) Check Ozone ageing**

Temperature

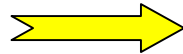
Ageing Test B2



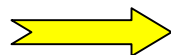
Increase test interval to 168 h



**Compare mechanical properties
(tensile/ elongation) before/ after
(see ECE R 110, 5F)**



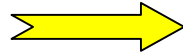
**Change 85°C to maximum
operating temperature**



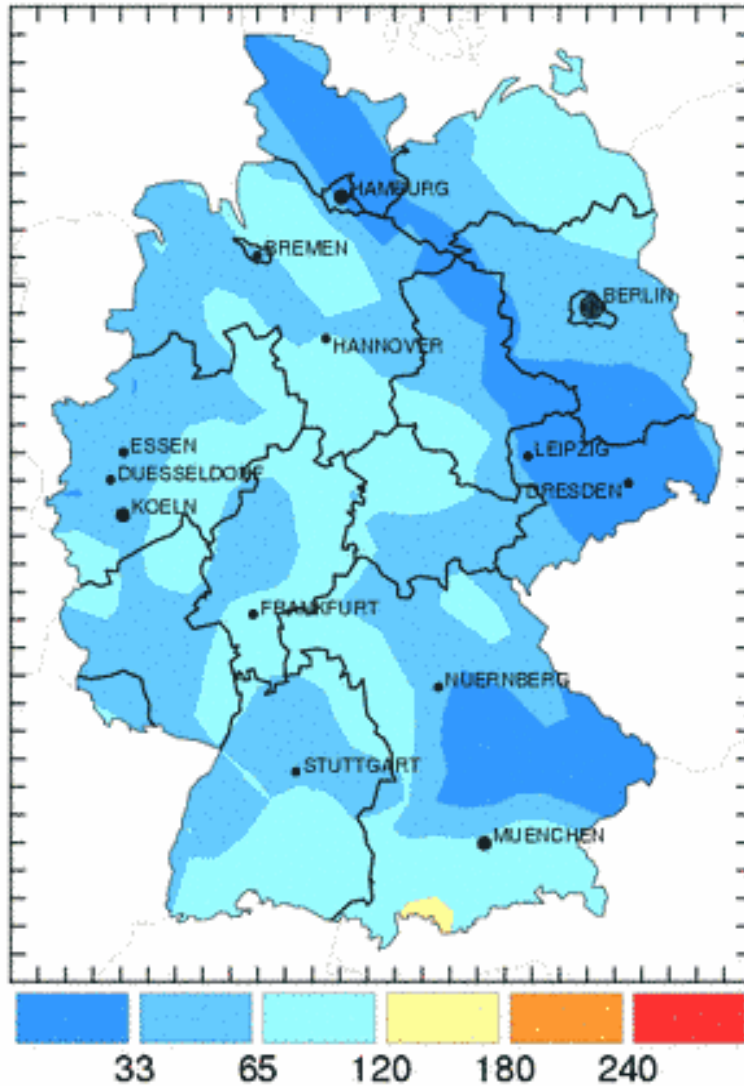
Hardness test (microhardness)

Air/ ozone

**Ozone ageing
Test**



ECE R 110, 5G for elastomer



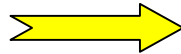
**Forecast of maximum concentration for
Tuesday, 04. 03 2003 ($\mu\text{g}/\text{m}^3$ air)**

Mit freundlicher Unterstützung von [EURAD](#)

Note: $100 \mu\text{g}/\text{m}^3$ air equals 0,05 ppm
ozone warning starts at $200 \mu\text{g}/\text{m}^3$ air

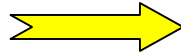
**Latest news
(Supplement I, 31.01.2003)**

**Dry Heat
Resistance**



Applicable for Classes 0, 1 and 3

**Ozone ageing
Test**



Applicable for Classes 0, 1 and 3

**ANNEX 5G, OZONE AGEING:
Test time reduced to 72 hours**