Hillebrand GORI

Hillebrand Gori climatic risk predictive tool

Beer quality indicator

Very hot	Hot	Comfort	Cold & very cold
Above +30°C	+21°C to +30°C	+5°C to +20°C	Under +5°C
Above +86°F	+69°F to 86°F	+41°F to +68°F	Under +41°F
Formation of light struck (skunk / leeky) flavour in clear or green glass at any temperature if exposed to sunlight or fluorescent lightsbove +30°C			
Probable haze formation especially if combined with motion			
Accelerated aging			
Taint contamination due to lacquer breakdown in cans or crown corks			
	Decline in bitterness change of bitter/sweet ratio		
Decline in bitterness change of bitter/sweet ratio	Possible bottle label damage, especially if damp		
			Probable package damage if freezing occurs split cans, broken bottles

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Labels
Factors which can impact label quality/integrity:

The paper used (uncoated, coated, metallised, film)

The paper stock, thickness and calibre

The label type (single/multiple layer; high-gloss/semi-gloss/matte finishes; etc.)

The surface condition, contour and shape of the bottle

The coatings and adhesives used in application

The storage and transportation conditions of the bottle once the label has been applied

Labels are susceptible to damage in transit and storage. This damage is caused by a combination of temperature and humidity fluctuations and extremes. In shipping containers, extremes of heat, cold and humidity can soften glues and adhesives, leading to labels slipping and peeling. The combination of temperature decreases, high relative humidity level increases causes condensation (risk of container rain) which damages labels.

Packaging
Cardboard packaging is essential for the safety and protection

Cardboard is very sensitive to environmental conditions, especially moisture.

Studies show the sensitivity of corrugated cardboard to the relative humidity (RH) of the environment tested:

Elastic properties change significantly beyond 70% RH.
This effect is more noticeable on bending characteristics than in tensile ones.
Bending stiffness falls by 54% when the RH reaches 90%.
From 50%, the relative humidity causes:

An increase in the gross weight and in the dimensions of the cardboard

A loss of its resistance properties

A loss of its compression performances, thus reducing the resistance to compression

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