

DD

FT006/02_en

Specifications

Production: Process for producing *DD* cork stoppers by individual moulding

Size specifications ⁽¹⁾:

| | |
|-----------------------|--------------------------|
| Length (40 and 44 mm) | Nominal value ± 0.50 |
| Diameter (23.5 mm) | Nominal value ± 0.30 |

Control points:

| | |
|--|--|
| 1. Humidity ⁽²⁾ | 6.0% ± 2.0 |
| 2. Specific weight ⁽¹⁾ | 285 kg/m ³ ± 25 |
| 3. Resistance to boiling water ⁽³⁾ | Absence of disaggregation |
| 4. Sensory analysis ⁽⁵⁾ | Neutral |
| 5. Capillarity ⁽⁵⁾ | < 2 mm |
| 6. Residual peroxide ⁽⁴⁾ ⁽⁵⁾ | < 0.2 mg/cork |
| 7. Residual solids ⁽⁵⁾ | < 2.5 mg/cork stopper (Untreated cork stoppers) < 1.5 mg/cork stopper (Treated cork stoppers) |
| 8. Extraction force ⁽⁶⁾ | 30 daN ± 5 |
| 9. Compression force ⁽⁷⁾ | 90 ± 30 daN |
| 10. Torsion ⁽⁸⁾ | |
| Angle | > 35° |
| Momentum | > 17 daN.cm |
| Shear stress | > 6 daN/cm ² |
| 11. Liquid seal capability ⁽⁹⁾ | 100% ≤ 2.5 bar |
| 12. 2,4,6 - TCA ⁽⁵⁾ | < 1.5 ng/L |
| PCA | < LD |
| TeCA | < LD |
| TBA | < LD |

Standards:

| | | |
|------------------------------------|-------------------------------------|------------------------------------|
| ⁽¹⁾ NP 4351 / NP 2803-1 | ⁽²⁾ NP 4351 / NP 2803-02 | ⁽³⁾ NP 4351 / NP 2803-7 |
| ⁽⁴⁾ SYSTECODE | ⁽⁵⁾ Internal Method | ⁽⁶⁾ NP 4351 / NP 2803-4 |
| ⁽⁷⁾ NP 2803-3 | ⁽⁸⁾ NP 4351 / NP 2803-6 | ⁽⁹⁾ NP 2803-5 |



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Manufacturing process

The *DD* cork stopper is a technical cork stopper made up of an agglomerated body with a natural cork disc at each of the ends.

The manufacturing process used is very different from that used in the production of traditional "1+1" cork stoppers currently available in the market. The *DD* cork stopper's body is manufactured by individual moulding, by simultaneously gluing the two natural cork disks at a single stage. This technique allows the production of a more homogeneous cork stopper. The cork granulate of the cork stopper body covers the entire surface of the natural cork disks. This perfect connection between the three cork stopper's components (agglomerate body + 2 disks) guarantees a specific uniformity and mechanical behaviour (elasticity, compression force, extraction strength, resistance to boiling water and seal capability).

The products used in the manufacture of *DD* cork stoppers comply with all FDA requirements.

TCA control

The guarantee that the presence of TCA is at a level lower than 1.5 ng/L in the *DD* cork stoppers is achieved by the following three elements:

- **Raw material (Cork):** All raw material used in producing *DD* cork stoppers comes from cork exclusively selected, bought and processed by Grupo Piedade.
- **Steam treatment:** the treatment for disinfecting the granulate is made by a continuous steam or water system, which allows the reduction of the residual TCA values.
- **Control of TCA levels by GC-MS:** Grupo Piedade relies on its own laboratory and quality control systems. Representative samples at each production phase are analysed by GC-MS.

Visual appearance

The *DD* cork stopper is produced in two lengths (40 and 44 mm) and with a standard diameter (23.5 mm). The classification of cork stoppers based on the visual quality of the natural cork disks is performed by an optical selection process, which allows for the cork stopper to be separated into 5 specific and reproducible classes (Sup/A/B/C/D).