

Bottling, Labelling & Packaging

Sound corking practices vital for closure performance

While natural cork may be better than ever, improved bottling practices are still needed across the wine industry.

Performance, not history

Natural cork is the traditional closure for wine, with hundreds of years of experience underpinning the association between the two. But 21st century winemaking, especially as it is practiced in New World wineries today, bears little resemblance to its long traditions.

So where have the innovations and increased technology in the wine industry left the natural cork stopper?

The unique physical properties of corkwood and its relative ease of use in bottling historically gave cork near-total dominance in wine closure. But the demands of winemakers and retailers are today driven primarily by technical performance, not just by tradition or consumer preference.

Closure technology is changing too. There's a fair chance a wine bottled today in Australia or New Zealand may be sealed with a screw cap, plastic stopper, a 'technical cork' or a cork hybrid. The natural cork stopper is only one of many options available to winemakers.

Consequently, a question that has been asked often in recent times, particularly in Australasia, is "Does natural cork have a future in the wine industry?"

The cork industry's response is an emphatic "yes". It says quality natural cork is adaptable enough to keep pace with change and remain the ideal closure.

A premium closure

According to Carl Moreton, general manager of Amorim Cork Australia, based in Melbourne, cork has come under challenge in Australia and New Zealand, but he firmly believes these challenges have pushed first-tier cork manufacturers and suppliers to lift their game.

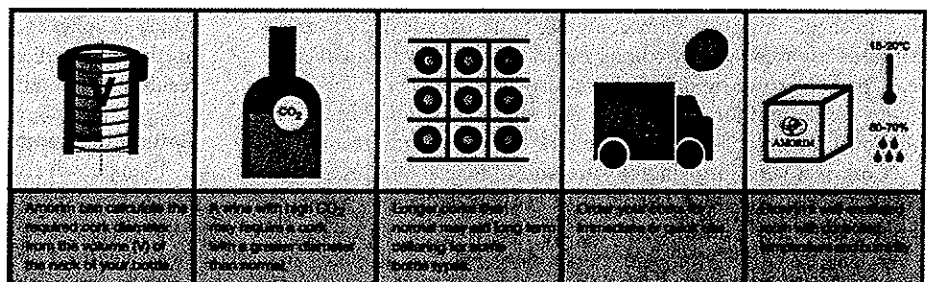
"Cork has superb natural properties and its performance in long-term storage of wine is better understood than any of the alternatives. But that's not enough any more - we have had to find our place in an evolving and increasingly price-conscious industry and fulfill that role well," he says.

Amorim Cork Australia is a wholly-owned subsidiary of the Portuguese giant Corticeira Amorim, the world's biggest manufacturer of wine closures. While others have diversified,

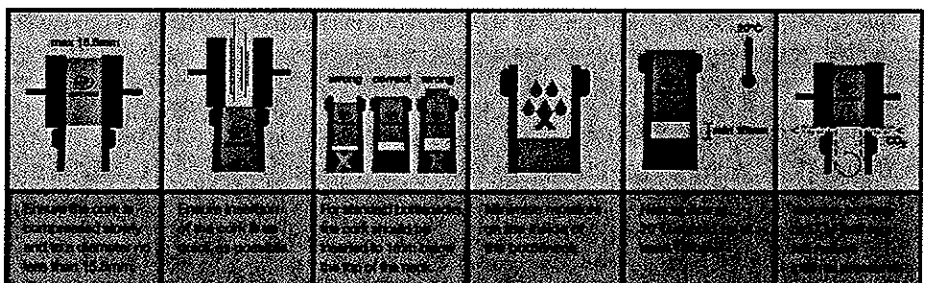
Amorim has concentrated its efforts on improving cork quality and consistency.

Amorim has pioneered several industrial processes to improve quality and consistency, ▶

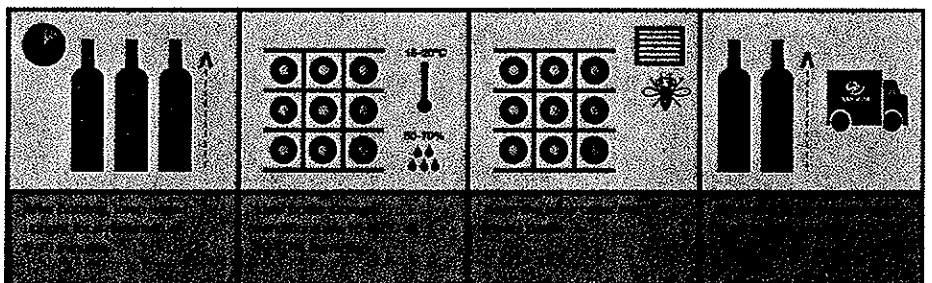
SELECTION AND STORAGE OF CORKS



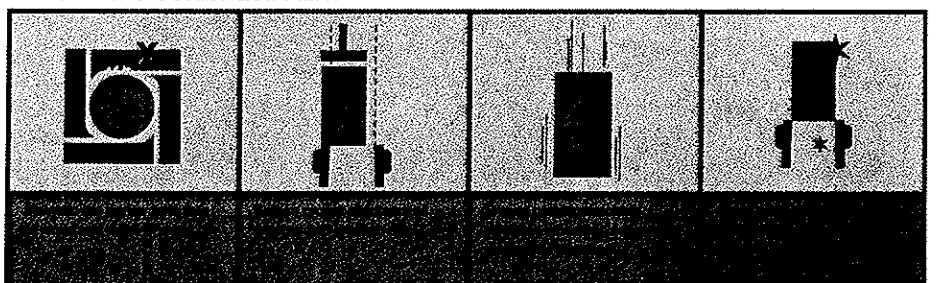
INSERTING THE CORK



STORAGE AND TRANSPORT OF WINE



MAINTAINING CORK EQUIPMENT



A technical bulletin and winery checklist on choosing and using cork are available at www.corkfacts.com

bottling, labelling & packaging

most notably a proprietary process, ROSA, to rid cork of the environmental contaminant, 2,4,6-trichloroanisole (TCA), which imparts musty taints to wine.

Moreton says cork has never been cleaner or more reliable than it is today, and this has been recognised by makers of premium wine. "If anything, the demand for our corks at the premium end has intensified in the last five years. Winemakers understand that a top-grade natural cork is without peer."

Poor bottling practices can lead to faults

However, improving the product is only part of what is required to ensure cork's future. Moreton says winemakers and contract bottlers need to know how to get the most out of the corks they use and minimise the risks that might arise in bottling.

In particular, Moreton is aware of faults such as wine travel and leakage that are still reported by some Australian wineries - faults that he primarily attributes to poor bottling practices and shortcomings in handling and storing corks.

"Most wineries are doing the right thing, so it's the exceptions that stick in your mind. I have seen corks stored outside in 38 degree heat, in sheds alongside farm equipment and chemicals, on trucks that were last used to carry onions and in plastic bags for up to eight years past their use-by date. I have also seen a winery where the bottles are upright for only 30 seconds after corking before they're laid down, which doesn't allow the cork enough time to recover.

"Cork is a very forgiving closure and it adapts well, especially to variations in the bore of the bottle, but all closures have their requirements for optimal performance and cork is no exception. Some wineries and bottlers are more complacent about their corks than I would prefer," he says.

Corking good practice

Five years ago, Amorim issued a technical bulletin to winemakers and a checklist on proper corking practices (both still available at www.corkfacts.com) and these remain relevant and useful advice for the wine industry, Moreton says. Amorim provides additional advice to winemakers with each carton of corks supplied.

The technical bulletin provides advice on selecting the right cork, storing corks properly, correct insertion into the bottleneck, handling of wine post-bottling and, most importantly, regular maintenance of corking equipment.

On storing corks, Moreton advises winemakers to order corks for delivery close to when they need them. Amorim recommends use

usually within six months and certainly no longer than 12 months, even if stored in proper conditions.

"We don't really want people to hold corks; we would prefer to deliver just-in-time," he says. The shortcomings he sees in storage of corks usually arise from lack of room in the winery.

Mind the headspace

On inserting corks, Moreton often talks to wineries about headspace. The 2001 Amorim technical bulletin rated headspace as the single biggest issue in wine bottling and Moreton says this remains largely unchanged in 2006.

Mick Franks, head of technical sales at Wine Industry Services in Salisbury, South Australia, agrees. "The most common cork-related problems we're seeing at present are wine travel and leakage, and the main cause of these is lack of headspace.

"The cork acts like a piston compressing and pressuring the air in the bottleneck, so you need some way to counteract or absorb this effect and finish up with little or no pressure or vacuum in the headspace," Franks says.

Amorim recommends a headspace of at least 15mm at 20°C, which it believes is normally sufficient to absorb the piston effect of the inserted cork and safeguard against excessive pressures resulting from temperature changes during transport.

Getting the compression right

Franks, who oversees the installation of bottling lines, says he cannot over emphasise the need for good maintenance of the compression assembly, i.e. corker jaws, sliding blocks, springs and bottle-centring device.

"Wear or damage to the corker jaws affects the level of compression on the cork, causing either over compression, which may delay recovery of the cork, or under compression, which often leads to lipping."

He warns that the damage or wear can be subtle - just a "small wear mark or chip on the edge of a jaw" - but this is often sufficient to cause "a hairline crease in the cork and therefore lead to some wine travel."

Franks also warns that "it's important to get the cork compression diameter right - as a rule of thumb, for Australian glass it should be 16mm at compression." He advises clients to measure the compression diameter with a cork in the corker jaws, as this will give a more accurate reading than without a cork, particularly with the older machines.

In his experience, the majority of corking machines are reasonably well maintained but "it's surprising to see that some of the smaller operations are unaware of the correct procedure" for adjusting cork compression.

Other problems that arise include misalignment of the centring device (due to a change in bottle bore) and breaks or blockages in the channels used by vacuum corkers. "If the vacuum is not set properly, we have seen headspace pressures as high as 1.5 bar.

"I'm a big believer that, for each and every shift, the compression assembly should be removed, thoroughly cleaned, checked for wear and chips, lubricated and reassembled. With corkers, everything is internal, and faults are hard to spot, so it is important to check every day.

"Some might think that's overkill but it's important for the longevity and reliability of the assembly," he says.

Finding fault

When problems arise during or after the bottling, some wineries and bottlers have a tendency to blame the cork first. "Quite a few will look straightaway at the cork as the cause of the fault, before they look at the machine," Franks says.

Nevertheless, Amorim's area sales manager for Asia, Australia and South Africa, António Furtado Mendonça, concedes that sometimes the cork is at fault.

"When the cork is responsible for the failure, it is most frequently the surface coating on the cork that is the cause, as this can lead to variable insertions and make cork extraction difficult," he says.

"But also I have seen the wrong cork being used for a particular bottle. Clients may change bottles and buy the same cork as always."

Conclusion

Natural cork no longer enjoys a near-monopoly as a wine closure and in some markets it competes hard with a host of alternatives.

Cork manufacturers such as Amorim have made progress in improving quality and consistency in their products. However, problems such as leakage and wine travel are still occurring, prompting renewed calls for good cork practices in the selection, storage of corks and the maintenance of corking equipment.

Achieving the right amount of headspace during bottling remains a key issue and one that is believed to be a common cause of post-bottling failure. ■