Artisan Barrels & Tanks, Inc.

USE OF NOMBLOT CONCRETE WINE TANKS

1) Use of concrete wine tanks

-- Our concrete tanks are made of washed gravel and sand, 52,5 cement CPA, iron 500 FETE and well water, with no additives. Nomblot's concrete surfaces receive sanitary and food grade approval from both the European Union and the Food & Drug Administration in the USA (FDA). Accessories are made of stainless steel 316 L or 304 L.

-- Our tanks are solely intended for winemaking or storage of wine.

-- **Never leave a concrete tank at a temperature above 32 ° C / 90 ° F**.

-- Every year, **check the condition of the gaskets** and change them if necessary.

-- **The tanks should only be moved when empty**, and must be shimmed so all legs support the tank or egg: if you can insert a sheet of paper underneath one of the tank/egg feet, it means the egg is not supported by this leg.

When lifting the egg, please be very careful and wrap the forks with protective material so the legs don't get chipped.

-- It is a good idea to **apply Nomblot's colored "lasure" (97% micro porous colored coat) every 3-5 years to protect the porous concrete for wine & tartaric acid stains.**

-- You may need to insert with a **small brush pure and dry Portland cement (without water) into surface cracks prior to applying the paint**. The dry cement will absorb the cellar's humidity and solidifies to plug up these cracks.

2) Unloading, Installation, Placement and Shipping of the Tanks

--When lifting tanks from the container using the lift lugs, **do not allow the lifting cables to angle inward more than 45 degrees (the crane must tall enough to lift from quite high above the tank, in other words).**

-- **All legs must be in solid contact with the floor (for Eggs and Dolia) and/or the bottom of the tanks**. Often **shims are needed on one or more of the legs** (Nomblot usually supplies sheets of slate for large tanks, for between the legs and the tank bottom); but any hard, thin material can be used, such as metal or plastic (wood is not recommended).

-- **Align the edge of the legs with the outside edge of the floor of the tank. The junction of wall and floor is the most critical spot for support** (not in the middle of the floor of the tank).

-- For tanks with separate legs, it is also **possible to put a layer of soft quick-set concrete on top of the legs**, and then lower the tank onto the legs. In effect the tank will balance itself and squeeze out the excess concrete.

-- Exact location/placement of the legs does not need to be precisely equal; **just be sure approximately to support the four corners or quadrants of the tank.** For instance, if you wish to have the front legs a bit further apart to allow for easier access to the front hatch, a few inches "off-center" is allowable.

--**If upright tanks are to be shipped on a flatbed trailer, never use the lift lugs to strap down the tank; instead use heavy wooden beams to create straight sharp corners for the soft but heavy-duty straps to run across the entire tank**.

3) Application of tartaric acid to the walls of the wine tanks

-- **Gently brush or spray** (a hand-pump "garden" sprayer is ideal) **the inner walls of the tanks 2-3 times minimum, at 24-hour intervals, using a maximum 30% tartaric acid solution in non- chlorinated water**. Lower concentrations are even safer on the tank interior, but may require more coats**. Depending on the source/type of tartaric acid, there can be some color to the initial draining solution; this is harmless and will diminish with the repeated coats, and will not occur in juice/wine.**

-- **Rinse with cold water between coats** (**but do wait an hour or two before rinsing, to allow the acid reaction to be effective**), as excessive dried acid could continue to react with the concrete in humid conditions.

-- As a guideline, the amount of tartaric acid necessary for this operation is 40 grams per square meter of tank surface, per treatment. Never go over 30% by weight for every liter of water (which weighs 1 kg), use .3 kg (300 grams) tartaric acid.

-- **To check if the tartaric acid has been applied correctly, throw a small glass of acid solution at 50% in the tank: there should not be any reaction such as bubbling or off-gassing of CO2 (rinse afterwards with plain water).**

-- Before applying tartaric acid to the interior walls of the wine tanks, it is a good idea to protect the exterior of the wine tanks by shrink-wrapping the tank/egg with plastic film; this will avoid any cosmetic staining of the exterior walls.

4) Cleaning of the tanks

-- **Never use aggressive means for cleaning—no hard brushing; or pressurized water (no pressure washer) or closed-circuit automatic cleaning head or sprinkler connected to a pump, as repetitive water spraying may be too abrasive.**

-- **Never heat the tanks or use water hotter than 32°C / 90 ° F.**

-- **Do not use citric acid or other acidic cleaning or sanitizing products such as sulfur**.

-- To remove the tartaric deposits, you can also use a pH basic product such as Vitinet 0011, Hydral 0750 and Hydrox 0751 from the Primalab brand (www.primalab.com). **In the US, PeroxyClean and Vinoguard (www.ecolab.com)** are suitable. After using a basic product **for long term empty tank storage, you will need to apply tartaric acid (step 2) before you can fill the tank with wine again.**

-- **To prevent the development of mold**, **make sure the tank remains dry during storage** (and it is good to use **fans** until dry) and keep them ventilated by opening the top lid and bottom/racking ports or hatches.

Please find below a **simple procedure** some of our winemakers in California or Washington are using to clean their concrete tanks or eggs:

1. Rinse tank thoroughly with warm water, never exceeding 90F
2. Fill tank with cold water up to a couple inches above fermentation line.
3. Mix 1.5 scoops of Peroxy (1000g) into 22qt large clear bucket with hot water
    a. Fill 3/4 way up
    b. Making sure that Peroxy is mostly dissolved
4. Dump gradually into tank, being careful not to have any Peroxy making direct contact with walls of tank.
5. Let solution sit in tank overnight (8hrs contact time)
6. Drain or transfer next morning

7. Inspect the Tank
    a. If dirty, proceed to step 8.
    b. If clean proceed to applying the tartaric solution (**chapter 3**)
8. Climb into Tank and scrub any problem areas
    a. Fill sprayer with standard Peroxy solution (700g/40gal or 0.46g/100mL)
    b. Fill 8qt bucket with standard Peroxy solution up to 4L mark, then dilute with water up to 6L
    c. With sprayer, apply direct contact to problem areas, then take smaller white brush and scrub with moderate pressure
    d. Apply final rinse with water

5) Using Bellot seals, lids, valves and glycol systems

-- **Always use a breather** (either Cristal aseptic bung mostly for MC7 eggs or a VOG210 hydraulic bung for all other larger eggs/dolia or tanks: not using a breather and just capping your concrete vessel will result in potential cracks/leaks during primary and secondary fermentation.

-- The top lid and door gaskets are extremely flexible, and do not require strong tightening. **Do not over-tighten**.

-- For a good seal always position the lid on the axis of the joint receptacle and tighten the butterfly handles in a cross pattern, until **obtaining a firm clamping without visible deformation of the lid.**

-- It is best to **change the sealing gasket every 3 to 4 years** or when they harden; doing so prevents over-tightening.

-- The frames are made of stainless steel and do not require special maintenance. The hoods and gaskets can be cleaned regularly with the same antibacterial products used for the rest of your equipment**. Do not use hot water on PVC caps which would deform the PVC**. When cleaning, the gaskets (which are not glued in place) can easily be removed to verify the condition and cleanliness of the part of the cover hidden by them.

-- The **tasting valve should not be over-tightened**. It is fully closed when the piston makes first contact/stops. **Over-tightening can damage the gaskets and strip the threads.**

-- Regularly apply **alimentary grease to the gaskets** on the tasting valve's piston, especially if the taster is not used for a long period. This will keep the gasket from binding with the stainless-steel parts.

-- **Before connecting any glycol plate or coil, please test with water** to make sure no damage or leaks have occurred during shipment.