

The Best Designs, Fonts and Materials for Seabird Read-Rings*

* Here the term “READ-RING” is used for an individual text-coded, field-readable (colour) ring/band to differentiate it from the uncoded “COLOUR-RING”. Further, analogously, “RING-READERS” can “READ” “READ-RINGED” birds and get “READS” (sightings).

WHEN PLANNING READ-RINGING PROJECTS THINK OVER FIRST special demands due to species, data quality, ringers, ring-readers, project length, costs etc. AND CHOOSE THEN the best options from the following subjects:

Materials

1. **PVC** (Vinyl, Darvic, PVC-U =rigid polyvinyl chloride), soft, easy to use, but limited UV and wear durability.
2. **PMMA** (acrylics), excellent outdoor resistance, a bit brittle.
3. **PS and ABS** (polystyrene and co-polymers), common in cheap laminates, low outdoor and solvent resistance, for short projects.
4. **Note:** In addition to the basic polymers there are many blends and modifications, which have a bit different properties (UV- and wear resistance and rigidity etc.).
5. **POM, PUR, PA** (acetal, urethane, polyamide/nylon) are also possible for special rings, very good wear resistance.
6. **Anodised aluminium** can be used, but it can wear more quickly than plastic and it has limited colour and contrast variation.

Design of joints

1. **Butt glued joint**, joint may open in the long run for strings etc.
2. **Small overlap joint**, normally small overlap is needed for brittle PMMA, large overlap for PVC gives more roundish ring.
3. **Spiral rings**, 2-3 times rounded, roundish ring leads to even wear, but a bit difficult to glue around.
4. **Reverse engraved**, spiral rings, best wear resistance
5. **Snap-fit rings**, German **ELSA** ring injection moulded from POM for Storks and Cranes, two parts snapped together, laser printed codes have limited colours and may wear out
6. **Overlapping lego-rings**, glued together, very strong multi colour rings possible, a transponder or chip can be installed inside layers.
7. **Rings without joint**, PUR-rings installed over the toes by special opening pliers, soft and safety for bird, only for plain colour rings, marking and engraving difficult.

Engraving laminates and engraving

1. **Thickness of top layer** is important due to the wear longevity. Traditional laminates have 0.25 mm top layer, but the ones for laser engraving are only 0.1mm or less. Painted top layers exist, too.
2. **Delaminating** ought to be checked (from sharp edges).
3. **Depth of engraving** is important, too. Deep engraving is easy to make, but it collects dirt and weakens the ring, if not filled.
4. **Adequate margins** increase the strength and lifespan of rings.

Colours

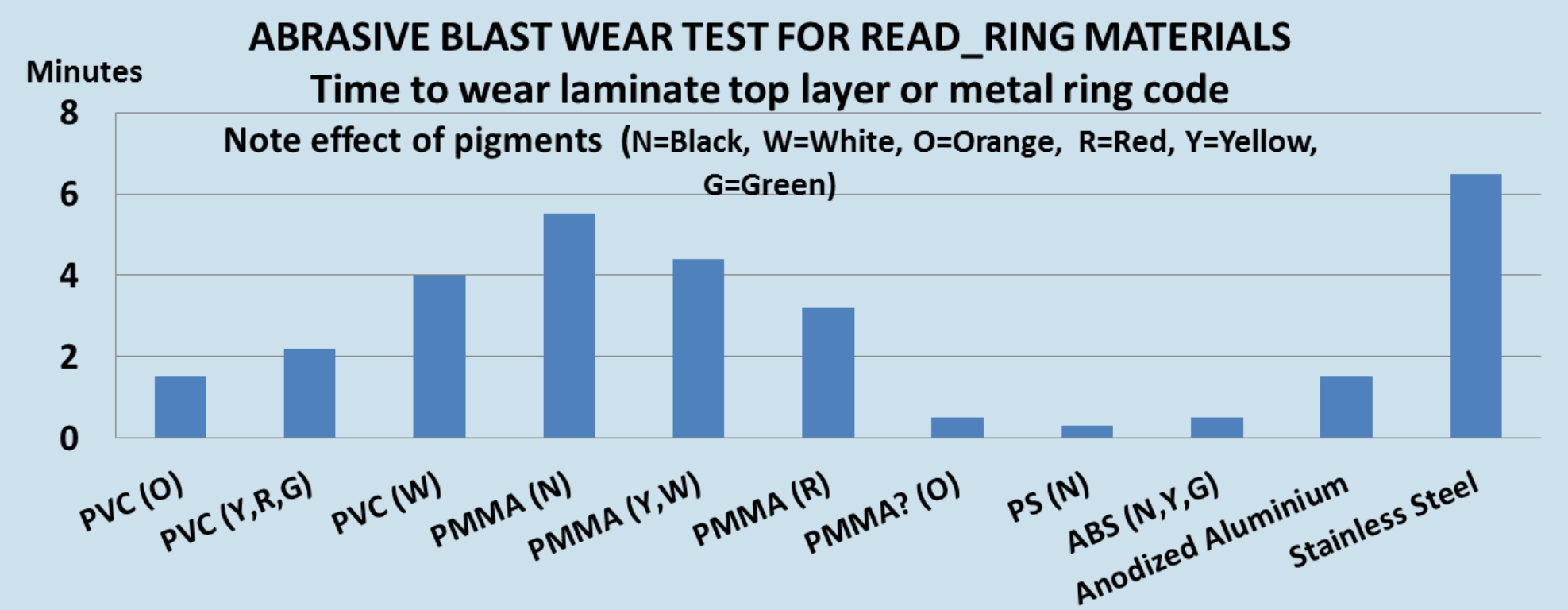
1. **Clear basic colours** (W,Y,R,G,N,B) are best, rings wear and get dirty and some pigments are not UV-resistant, light and dark colours can be misread.
2. **Pigments** have great effect to wear resistance.
3. **Good contrast** between base and code helps reading, engraving grooves can get dirty, if not filled.
4. **Unusual font colours** are risky, engraving grooves get dirty and oiled (black), if not filled.

Codes and fonts

1. **Check-codes and -marks** minimize false reads. An extra algorithmic character increases data quality. Use of check-dots or hyphens in the code can ensure and identify incomplete reads.
2. **Extra texts** help identification from other projects.
3. **Closed and thick fonts** wear quickly.
4. **Some fonts** are often misread, like **3/5/S, A/4** and **3/8/6/9/0** and narrow **1/T/L/J**. Also **0/U, 7/Z, R/K/X** and **V/Y** are easy to mix, if the whole character is not visible.
5. **Mirror characters** (like **H,N,S,Z,9,6**) can be read upside down.

Make your own rings, save or get money

1. **Plain rings** can be cut out from sheet and rolled, and plain PUR-rings can be cut out easily from pipe.
2. **You can buy cheap engraved plates** and roll the rings by yourself. Rolling is easy, it takes only about a minute to roll one.
3. **Note the total cost** of rings/ringing against the gained read-data.
4. **Sell promotional read-rings** and get sponsors for your projects.



A·B·C·E·F·G·H·J·K·L

On the left are my fonts, any ideas for improvement?

M·N·P·R·S·T·U·V·W·X·Y·Z

An example about font wear is below.

1234567890

1234567890ABCDGMW

1234567890ABCDGMW



For more info or copy of this:
risto@juvaste.fi or www.juvaste.fi
http://www.juvaste.fi/risto/readrings.php