



RIPLING

A NATURAL PLYWOOD DEFECT

What is RIPPLING



Rippling is represented by wave-like protrusions (not higher than 0.9mm of various lengths) on the surface of laminated plywood along the fibers of the top layer.

- ✓ on the edges of panels and/or throughout the board
- ✓ next to screw holes or nails
- ✓ in places of surface damage



A natural defect of wood in conditions of improper storage and transportation, especially in contact with water.

DOES NOT AFFECT:

- ✓ on the bearing capacity of the finished product
- ✓ on the efficiency of plywood use
- ✓ on the number of formwork boards usage cycles

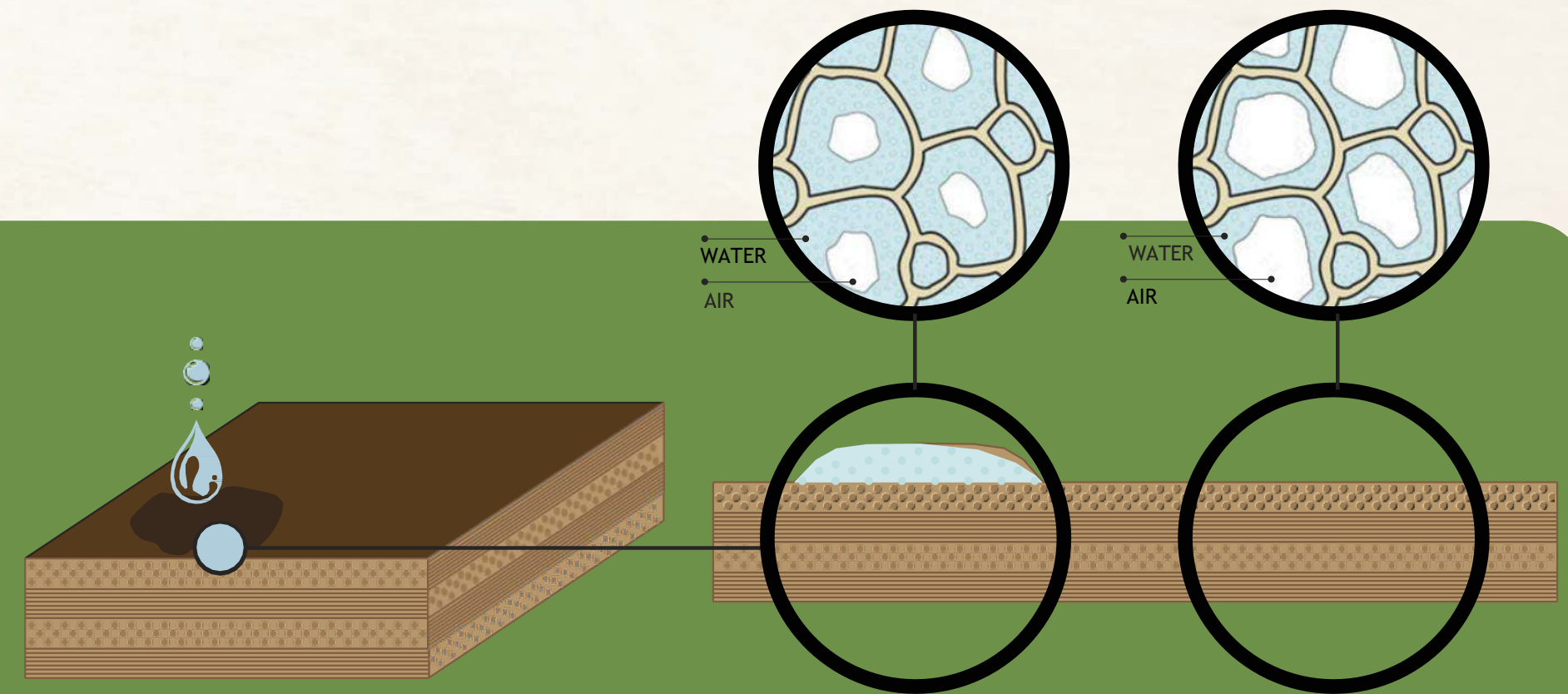


Causes of RIPPLING



Occurs as a result of moisture penetrating the top layer of veneer through micro-cracks in the phenolic film or on the edges. This area swells, while the rest of the plywood surface remains dry all around the perimeter.

These differences in the moisture content of the wood lead to the appearance of a slight waviness.



Under what conditions does rippling occur:



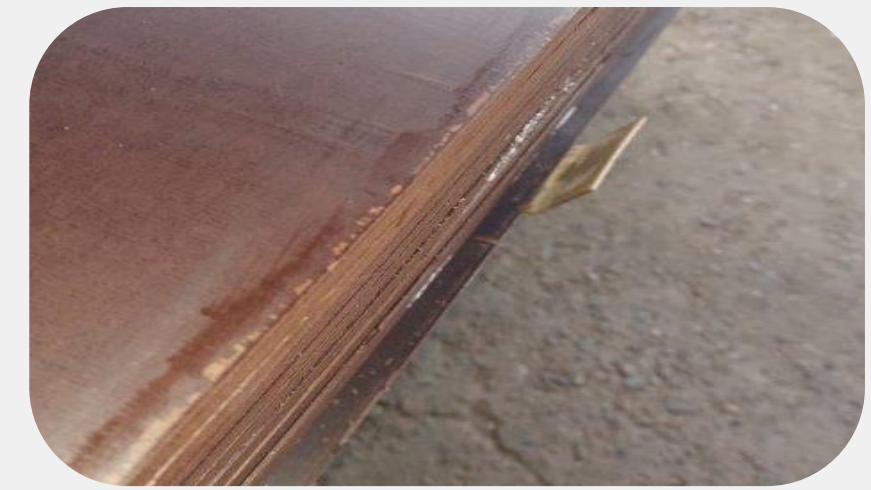
use in non-enclosed spaces



abrupt climate change during the day or seasonal precipitation conditions (spring - autumn months)



board trimming without proper processing of the ends and with the help of low - quality tools



lack of treatment of the ends or treatment of the ends with non-waterproof paint

How to eliminate RIPPLING?



Rippling only occurs during the first cycles of use until the top layer of plywood achieves uniform moisture saturation

When dry plywood (moisture content 6-10%) enters a humid environment or is in direct contact with water occurs
SWELLING OF THE MATERIAL AND THE APPEARANCE OF RIPPLING

Wood is hygroscopic, which means, it can release and reabsorb moisture. The release and reabsorption of moisture begins when there is a certain difference (humidity difference) between the moisture content in the wood and the moisture content in the air surrounding the wood.

After complete saturation with moisture (30-35%) of the upper layer, the rippling from the surface of the plywood boards almost completely disappears, usually after 2-3 cycles of interaction with water.

Rippling can be eliminated by alternately wetting and drying the sheet in a warm, covered, dry room before starting concrete work.

How to store plywood properly?

- ✓ Only in horizontal form, in stacks on pallets or wooden beams. Storing stacks on end is prohibited. Storing stacks directly on the floor can also lead to rippling, as the plywood will come into contact with the damp floor.
- ✓ The storage warehouse should be shielded from atmospheric influences, with a temperature range from -40°C to +50°C and relative humidity not exceeding 80%.
- ✓ When temporarily stored outdoors, cover the plywood (including with tarpaulin) from any weather conditions. It is not recommended to use impermeable plastic packaging material for external protection at the site of operation, as this will lead to the formation of condensation and subsequently to rippling.
- ✓ Stacks should be kept in a dry and clean condition, prevent contact with the ground (minimum 70 mm), and avoid mechanical damage.



How to avoid rippling?

- ✓ Cut the plywood using band or circular saws. First, crosscut against the grain of the face side, then along, to avoid splitting corners and reduce the size and quantity of splinters on the plane.
- ✓ When cutting with a circular saw, a high speed and a low feed rate are recommended.
- ✓ To protect the cut edges, use specific types of water-dispersion paint based on acrylate or other sealants.
- ✓ During installation, all holes should be filled with water-dispersion paint based on acrylate or other sealant, and it is recommended to treat the sheet surfaces with a hydrophobic compound.
- ✓ Use a sufficiently sharp drill equipped with a lead cutter to get holes with even edges. Start drilling from the face side. To avoid splits on the backside of the plywood, it is recommended to use a backing sheet.
- ✓ To prevent the plywood layers from splitting, it is recommended to use threaded nails or special screws at a distance from the edge of the sheet to the nail (12-15) mm.
- ✓ When using a plywood boards avoid damage of, for example, a deep vibrator, hammer, etc.
- ✓ In certain cases - pre-soak the plywood in cement milk.

Rippling test

1

- the ends of the plywood are covered with acrylic paint;
- on the surface of the samples, 9 punctures are made with a drill/needle to the depth of the veneer coating and outer layer.



2

- samples with punctures are covered with a damp cloth and left for 2 hours, periodically wetting the cloth;
- wave – like rays or ripple arrows with a size of 10-15 mm appear on the surface of the samples.



3

- the samples dry at room temperature;
- it was experimentally obtained that within 3 days rippling disappears on such samples.

CONTACT US

Quality Control Department

1, Commune street 1, Kirov region,
Kirov city, Russia, 610013

ply_quality@segezha-group.com

Office in Moscow

10, Presnenskaya Naberezhnaya,
block C, Moscow, Russia, 123112

infoply@segezha-group.com



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THANK YOU

Store plywood properly



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