



# Eurobot Junior 2026 - Homologation Guide

## Introduction:

Homologation is a process that all teams must complete before the competition. It involves verifying that your robot and all other equipment you will use comply with the specified regulations. Homologation generally takes place before the start of the competition. However, in exceptional cases, such as if you experience technical issues or travel delays, you may undergo homologation during the competition, but always before the start of the corresponding round. Otherwise, you will not be able to participate in that round. Still, you may participate in subsequent rounds once you have completed homologation.

The homologation area is divided into three sections:

- A) Compliance with dimensions, weights, and the presence of required components.
- B) Compliance with applicable safety standards.
- C) Dynamic performance on the playground.

Once you've registered your team at the Registration Desk, you'll find three homologation points corresponding to the three zones described above. You must take all your components through each zone for verification. Once you meet all the requirements, you will be assigned a number and be ready to compete. If you do not meet any of the requirements, you will have time to address the issue and return to the homologation area. For this reason, we encourage you to complete the homologation process as soon as possible so that you have enough time to address any issues the homologators point out.

The following is a description of each of the items to be checked during the homologation process, organized by area. You can use this document as a *checklist* to ensure that you meet all the requirements before traveling to the competition venue.

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### Area A (main robot):

- Non-deployed perimeter is less than 1200 mm:
  - It is the perimeter of the convex envelope of the robot's vertical projection on the ground (Figure 2). If the sides of your robot are not perfectly vertical, you must project each point on the robot vertically to determine its perimeter (see Figure 1).
- Deployed perimeter is less than 1400 mm:
  - If your robot has actuators that extend beyond its non-deployed perimeter, the perimeter generated when the actuators are fully extended cannot exceed 1400 mm. If your robot has more than one actuator, consider the total perimeter with all actuators deployed. However, if this exceeds the limit, you may choose not to deploy all of the actuators at once during the competition, but this is not recommended as it carries a risk of penalty.
- Height less than 350 mm (not including the emergency stop button or beacon support, see Figure 1).
- A vertical space measuring 100 mm (width) × 70 mm (height) where the team's number will be placed (see Figure 1):
  - Make sure the surface is smooth and clean to prevent the number from falling off during the competition.

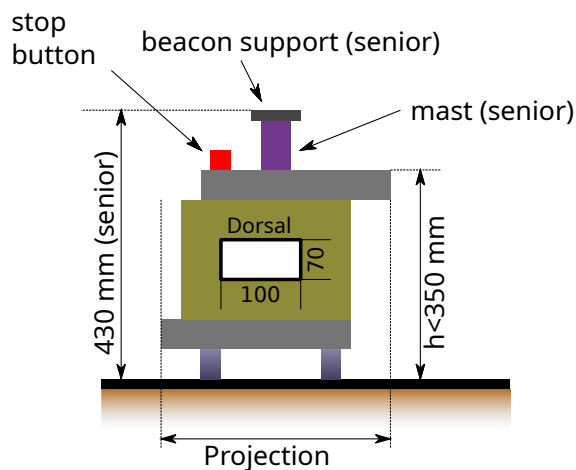


Figure 1: Robot dimensions

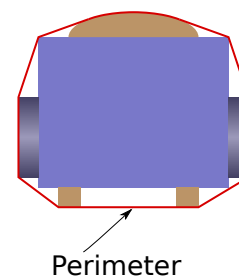


Figure 2: Convex envelope

- Emergency stop button (with a diameter of at least 20mm, red color and easily accessible)
  - This button should be located on top of the robot for immediate access. It should be operated by a simple, quick movement. This button is only necessary if the robot's batteries are built in. If the robot is operated by a cable, the button can be incorporated into the remote control. The button must stop the robot immediately.



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- On-board tag support
  - On the top of your robot, you must include a horizontal flat surface, at least 100 mm square, with hook-side Velcro, on which the referee will attach your color tag at the start of the match.
- If your robot is wire-guided:
  - The cable length from the controller to the robot is at least 5 meters, but keep in mind that this measurement is taken from the cable outlet. In other words, the internal wiring in both the controller and the robot is not included. Therefore, if you plan to control your robot via cable, you will need more than 5 meters to complete the circuit.
  - If you need to power your robot using a 230 V outlet, you will need an extension cord of at least two meters because the outlets around the playground may be slightly separated from it.



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### Area A (SIMAs):

We will review the following points for each of the SIMAs you present. Those that do not meet these criteria will be disqualified. However, you may still participate with the remaining SIMAs that do meet the criteria.

- A SIMA must be larger than a 60 mm side cube:
  - Horizontally, the vertical projection of the entire non-deformable perimeter must be larger than a square with sides of 60 mm.
  - Vertically, it is enough for the non-deformable height at any point to be greater than 60 mm.
  - In both cases, “non-deformable” means that it cannot be deformed by light pressure.
- Non-deployed perimeter is less than 600 mm.
- Deployed perimeter is less than 700 mm (without considering the actuator for the action “Munch time!”).
- Maximum non-deployed height 150 mm (without including the emergency stop button).
- Maximum deployed height 350 mm (without considering the actuator for the action “Munch time!”.)
- It is not based on a commercial design, or if it is, the design has been significantly modified.
- Emergency stop button (with a diameter of at least 20mm, red color and easily accessible).
- A vertical area measuring 30 × 30 mm where the team's number will be placed.
  - Make sure the surface is smooth and clean to prevent the number from falling off during the competition.
- If it must be activated by a team member at the start of the match, the starting cord must be longer than 500 mm.
- Weight is less than 1,5 kg.



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### Area B (security constraints):

We will verify that your equipment complies with the basic safety standards for any electromechanical device and that it does not pose a danger to people or game components.

- If you use a cable for remote control, the voltage in the cable is less than 13.8 V
- The voltage at any point on the robot is less than 48 V.
- The pressure is less than 4 bar at any point in a non-commercial compressed air system.
- If using lithium batteries, they must be in their safety bag (except for LiFePo4 and Mindstorms batteries, which are permitted). You must present the original charger for approval.
- Do not include any sharp or pointed objects that could damage the playground, game elements, other robots, or people.
- Do not project, intentionally or unintentionally, any type of object at other robots or people.
- If the robot uses LASER, see the specific section related to the use of LASER.

### Area B (SIMAs):

For each of the SIMAs you present, we will review the following aspects. Those that do not meet these criteria will be disqualified. However, you may still participate with the remaining SIMAs that do meet the criteria.

- The voltage at any point on the SIMA is less than 48 V.
- The pressure is less than 4 bar at any point in a non-commercial compressed air system.
- If using lithium batteries, they must be in their safety bag (except for LiFePo4 and Mindstorms batteries, which are permitted). You must present the original charger for approval.
- If it uses LASER, see the specific section related to the use of LASER.

### Area B (LASER):

If you plan to use a LASER, you must take into account which LASER categories are allowed and under what conditions. In any case, you must bring the manufacturer's data sheets with you for the homologation. Modified lasers will not be accepted under any circumstances, including those in categories 1 and 1M.

- Class 1 and 1M accepted
- Class 2 tolerated only in case the laser beam do not exceed the play area, and if it is switched off when the robot does not touch the play area.
- Class 2M, 3R, 3B and 4 strictly forbidden.



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### Area C (Behavior):

This final check will be performed on the playground or on a surface that replicates its conditions. Power on all equipment and ensure it is ready to go to minimize waiting times.

- The robot can fit inside the starting zone.
- The robot moves and it is capable of scoring points.
- The objects being manipulated are less than 350 mm in height.
- For all SIMAs:
  - All SIMAs fit together within the starting zone.
  - Each of the SIMAs is capable of exiting the starting zone on its own.