

Consistently Implemented Plastics Expertise:
In-house Leakage Tests (DIN 400500).
Progress for Your Success – Pöppelmann K-TECH®.



Reliable and Economical: **In-house Leakage Tests (DIN 40050)** – For Early Quality Testing During the Development Phase.

Pöppelmann's K-TECH® Division develops and produces high-quality injection moulded engineering parts for the automotive, electrical, mechanical and engineering industries. In order to perform in-house leakage tests throughout the entire product development phase, Pöppelmann K-TECH® has installed its own ingress protection testing chamber.

The ingress protection testing chamber has been specially developed

for the performance of leakage tests in compliance with DIN 40050. The chamber is rated for all ingress protection tests from IP X3 to IP X9K. The test specimen is placed on a rotary table inside the testing chamber. The IP X3 and IP X4 tests simulate rainy weather with a spray arc assembly equipped with 38 rain nozzles and subject the test specimen to the conditions prescribed by DIN 40050. In the IP X5 and IP X6 tests, the specimen is exposed to powerful jets of water from a distance of 2.5

to 3 metres, the nozzle outlets having a diameter of either 6.3 or 12.5 mm in order to obtain the required flow rates. Finally, in the IP X9K test, which simulates the action of a high-pressure cleaner, the specimen is exposed to a water jet mounted on a swivel arm. The hot water required for this test is heated to 80 °C in a 100-litre stainless steel tank before being projected onto the specimen at a pressure of 90 bar from a distance of 100 mm. A computerized control system permits the setting, monitoring and documentation of the tests.

Examples of Injection Moulded High-precision Engineering Parts that Undergo Our In-house Leakage Tests to DIN 40050.



ECU for Mercedes-Benz E Class.

As the interface between the vehicle and the electronic control unit, the ECU box must protect the central electrical system reliably and permanently against external influences such as water and dirt and against ingress of fuel, oil and other media. The leakage tests in compliance with DIN 40050 serve to simulate a vehicle's typical exposure to condensation, splashed/sprayed water and hot water from a high-pressure cleaner. The result: the timesaving and reliable development of a component featuring the required ingress resistance.



Cable entries and exits for the ECU box.

Cable entries and exits are integral parts of the ECU box. These two-component injection moulded parts take the form of rigid, dimensionally stable supporting plates in polypropylene with flexible circumferential sealing lips and flexible bushings for the cables in a polyolefin-based thermoplastic elastomer. The ingress protection properties of the cable entries and exits are constantly adapted and documented throughout the entire development phase.



ECU box undergoing simulated rain test (IP X3 test in compliance with DIN 40050) in the ingress protection testing chamber.

Test	Duration	Test conditions
IP X3	10 mins	Sprayed water, angle of impingement variable up to 60° from perpendicular
IP X4	10 mins	Splashed water from all sides
IP X5	3 mins	Water jet (12 litres/min) trained on rotating specimen
IP X6	3 mins	Pressurised water jet (100 l/min) trained on rotating specimen
IP X9K	30 secs secs per position	High-pressure water jet at 80 °C trained on specimen from four positions (0°, 30°, 60°, 90°)



Blanking caps for compact plugs.

Injection moulded in PBT with a 20% w/w glass fibre content, these blanking caps protect any unused compact plugs in the engine compartment against external influences, such as water and dirt. The caps snap onto the plugs positively and cannot be lost inadvertently. They are designed and rated in compliance with the requirements governing plug-and-socket systems and therefore meet the most demanding ingress protection requirements, including those of IP X9K.



Blanking plugs for connectors.

Like the blanking caps, these blanking plugs with integrally moulded silicone seals also belong to the standard product range of Pöppelmann K-TECH®. Two snap-on lugs keep the plug reliably fastened to the connector body. The silicone seal not only protects the delicate interior of the connector against damage but also provides the necessary protection against ingress of water. Here, too, the Pöppelmann K-TECH® blanking plugs meet the highly demanding ingress protection requirements of IP X9K.

A Successful Family-owned Company: Focusing on People.

Pöppelmann – a strong and reliable partner. Since 1949 the family-owned company Pöppelmann with 5 production sites and 450 injection moulding, thermoforming machines and extruders has proved itself to be a leading manufacturer in the plastic processing industry. In more than 70 countries the quality “made by Pöppelmann” is appreciated. More than 1,600 highly qualified employees stand for our success.

Our Pöppelmann K-TECH® business division develops and manufactures technical injection mouldings to the highest quality standards for the automotive and electrical appliances industry, mechanical engineering, and equipment manufacturers.

Our manufacturing operations are ISO/TS 16949:2009 and DIN EN ISO 9001:2008 certified.



More than 1,600 Pöppelmann employees stand for productivity, quality and service



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