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Technical Bulletin
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TO: Maserati Network

Maserati
PERSONAL SERVICE LAB
MASTERS OF CARE

Cold Weather Guidelines for BEV Vehicles

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This Technical Bulletin provides technicians and service personnel with a clear overview of expected BEV behavior in low ambient temperatures. It explains key system characteristics, including battery thermal management and EV Routing, and helps ensure accurate, consistent communication with customers when cold-weather concerns are reported. A customer information handout is also included with this bulletin for distribution as needed.

Applies to all **Maserati Folgore BEV models** operating in cold climates.

Objectives

- Explain why cold weather reduces **estimated range** and **public DC fast-charging speed** for BEVs.
- Clarify on how Maserati systems mitigate these effects (battery thermal management, EV-Routing with predictive pre-conditioning).
- Help staff distinguish normal, temperature-driven behavior from conditions requiring diagnosis.

Guidelines for Dealer Personnel

- Proactively set expectations with Folgore owners in cold climates regarding winter impacts on range and charging speed.
- Encourage use of **EV-Routing embedded into Navigation (MIA) System** prior to charging to enable battery pre-conditioning.
- When a customer reports a **concern**, use the decision flow below to separate normal behavior from a potential malfunction; document findings and escalate to Technical Support as needed.

Condition / Customer Concern

Customers may report one or more of the following during winter operation:

- **Reduced estimated range** versus **WLTP**-based expectations. (**Worldwide Harmonized Light Vehicles Test Procedure**)
- **Slower DC fast-charging** sessions, particularly when arriving with a cold battery or without EV-Routing.

This bulletin addresses **expected operational characteristics** in low temperatures. It does not supersede diagnostic routines for DTCs or system faults. If a customer's concern appears inconsistent with the above behaviors, follow standard diagnosis and escalate when necessary.

Operational Description

1. Low-Temperature Effects on Estimated Range

- WLTP testing is conducted at approximately **23 °C (73 °F)**. Real-world deviation increases significantly as temperatures fall.
- In freezing conditions of **0 °C (32 °F)**, Folgore models may experience an approximate **35% reduction** in real-world range compared to WLTP-based expectations.
- At **−7 °C (19.4 °F)**, reductions may reach approximately **55%** depending on driving and HVAC usage.
- Contextual factors such as winter tires, maximum defrost settings, or dense urban driving can increase the reduction.

Why This Happens

- Battery cell chemistry is less efficient at low temperatures.
- Additional energy is consumed to heat the cabin and maintain battery temperature.
- More energy required = less energy available for propulsion.

2. Low-Temperature Effects on DC Fast-Charging Speed

- A cold battery cannot accept high charging power. Charging remains limited until the battery is warmed.
- **Battery Thermal Management** and **EV-Routing** pre-heat the battery before arrival at a charger, reducing charging time.
- Without pre-conditioning, charging times can increase **by over 100%** in extreme cold.
- Pre-conditioning consumes approximately **10%** of battery energy before arrival so that the battery reaches the charger at the correct temperature for maximum charge power.
- More energy required = less energy available for propulsion.
- Actual results vary based on temperature, charger capability, and SOC window.

Service Information & Diagnostic Guidance

1. Verify Operating Conditions

Record ambient temperature, HVAC usage, tire type, and drive cycle. These significantly influence range and charging times.

2. Confirm “EV Routing 2.0”

Please refer to the Maserati Intelligence Assistance (MIA) Manual for details:
Connectivity Mode → Maserati Guide & Drive Services → EV Routing 2.0

Ask whether the customer set the charger as the destination **in the Maserati navigation system**. Without this, the battery will *not* pre-heat.

3. Compare to Expected Cold-Weather Performance

- At **0 °C (32 °F)** → approximately 35% range reduction may be normal.
- At **−7 °C (19.4 °F)** → approximately 55% reduction may be normal.
- DC fast-charging times can double or more without pre-conditioning.

4. If Behavior Appears Abnormal

Perform a full inspection and open a BOL if needed for further assistance.

Quick FAQ for Customers

Q: Why does my range drop so much when it's below freezing?
A: Batteries are less efficient in the cold, and the car uses extra energy to heat the cabin and battery. That combination lowers real-world range compared with warm-weather or lab values.

Q: Why was my fast-charge so slow today?
A: If the battery is cold or you didn't use **EV-Routing** to pre-heat the battery, the car must warm the pack before it can accept high power—this extends charging time.

Q: Does pre-heating waste energy?
A: It uses about **10%** to warm the battery, so you arrive with a bit less charge—but your stop is faster overall, especially in very cold weather.

Q: Are my results normal?
A: At approximately 0 °C, range can be roughly **35%** lower; around −7 °C, about **55%** lower (driving patterns, tires, and HVAC use matter). If your results seem far outside this, schedule a check.