

Three Weird Things That Happen In Very Cold Weather

By David Selch, MBA BSc



Frozen Ink – Photograph by Author

Copyrighted Material: Copyright © 2021 by David Selch and Service Reboot Inc. All rights reserved. No part of the publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means – electronic, mechanical, photocopying, recording, or otherwise – without prior written permission from the author, except for the inclusion of brief quotes for review.

Super freezing weather? I'm used to it. For 30 years, I've lived in Winnipeg, perhaps the coldest city in the world. Sure, we doff our caps to a few villages in Siberia and the arctic, but our 700,000 residents are bundled together more than 550 miles (890 km) further north than Chicago. We know cold and windy.

Even without the wind, the air itself is very very cold. It can hit minus 40 – not windchill, air temperature. Minus 40 is where the Celsius and Fahrenheit scales cross. As we get close to that magic number – and it's minus 38°C out now – the world stops making sense. Here are three things to watch for.

Top of the list – and I learned this one the hard way: duct tape. At about -35 degrees C (that's about -31° F) the adhesive in duct tape stops being sticky. So if you have a roll of duct tape in a tool box in an unheated garage, it will unspool like a spring. The cold glue flakes off onto, well, everything. Of course, when you bring the box into your warm house, the adhesive returns to its super sticky self, and what was a neat box of tools is now a mess of tape, tools, and blobs of tape adhesive.

Metal doorknobs – at warmer temperatures, they are smooth and slippery. Once they get below about minus 30°C (-22°F), they feel sticky because the metal knob can instantly freeze the normal moisture on your hand to ice. We don't think of our hands as being “wet” all the time, but even “dry” hands are a bit moist. How sticky is a cold doorknob? Cold enough to pull off a bit of skin. Up here, it becomes second nature to make sure you're hands are dry, or to grab a dishtowel to open the outer storm door.

Finally, oil thickens. Motor oil is graded at two temperatures 0°F and 212°F, because oil gets thicker at low temperatures and thinner at high temperatures. That's why there's two numbers in an oil grade. My car takes 5W30, meaning my “viscosity grade 30” oil behaves like “viscosity grade 5” in the Winter at zero degrees. 5Winter30, get it?

But it's way colder in a Winnipeg winter than 0°F (-18°C). In fact, the oil becomes so thick below around minus 35C that that the starter motor can't crank the engine. And the same happens with transmission fluid. In my 5-speed, if I let the clutch out right after startup, the car moves slowly forward, even with the car in neutral. The fluid is so thick it can transfer torque across the plates to the drive shaft, even when the car isn't in gear. Cars in Winnipeg come with a block heater that you plug in at night as standard equipment. Sadly, there's no block heater for the spare bottles of olive oil in my garage pantry, so they're frozen solid.

Tape that won't stick, doorknobs that will, and lubricants that don't. That's what really cold weather means. There are other examples that I'll save for another post. In the meantime, bundle up folks.

