



# CORNING® COLDFORM™ TECHNOLOGY

## SUSTAINABILITY FACT SHEET

Global Warming Potential is what is known as the carbon footprint. The difference between the carbon footprint of 1 million ft<sup>2</sup> of glass using ColdForm Tech vs. traditional hot-forming methods equates to<sup>1</sup>:



### 33,800,000

miles driven in a passenger car



### 222,500

tree seedlings grown for 10 years



### 1,630,000,000

smartphones charged

<sup>1</sup> <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

The most innovative automakers are focusing interior design differentiation on displays with next-level improvements: from simple to interactive, small to large, low to high resolution, and from flat to curved. Technical cover glass for displays remains a material of choice as it maintains the tactile feel, enhanced touch sensitivity, and beautiful aesthetics consumers have come to know and expect from their handheld devices. And only a flexible glass using patented Corning® ColdForm™ Technology enables innovative curved designs in an economical and sustainable way, helping automakers meet sustainability targets within their supply chains.

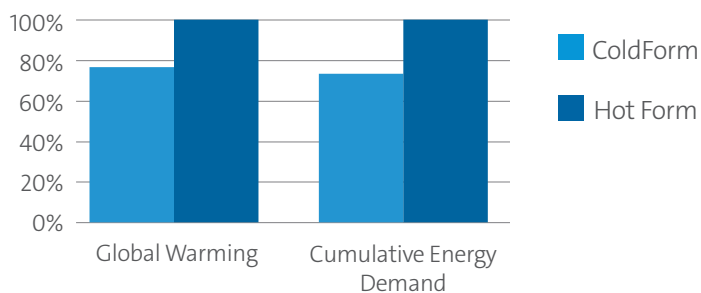
### INTRODUCTION TO LIFE CYCLE ASSESSMENT

Corning recognizes that design differentiation doesn't just have an impact on price and materials, but also on the environment. To measure this impact, Corning worked with a leading independent third party to conduct a life cycle assessment (LCA) on ColdForm™ Technology. An LCA is a type of study that measures various environmental impacts that might occur due to the use of natural resources and from emitting emissions and creating waste. An LCA looks at each stage of the product's life: raw materials extraction and processing (the supply chain), material transportation, manufacturing, transport to the customer, assembly/installation, use, and disposal. Every product has a potential impact and each life cycle stage can have different contributions.

### LCA RESULTS

ColdForm™ Technology's global warming potential is about 25% less than traditional hot-forming technology\*. Because forming doesn't happen until the last step in the cold-forming process before assembly with a display and structural components, processing is materials-, space-, and energy-efficient; this efficiency leads to better performance at the plant.

#### CRADLE TO GRAVE COLDFORM AND HOT FORM TECHNOLOGY DIFFERENCES



### RECYCLED CONTENT

In addition to its process efficiencies with ColdForm™ Technology, Corning Gorilla Glass for Automotive Interiors and AutoGrade™ Corning Gorilla Glass have been certified by UL Environment as containing 20% recycled content.

\*Assumptions for the comparative analysis of the hot form process assume similar geographical region and were collected through expertise from in-house hot forming for other types of automotive glass, industry research, expert opinions, and third-party evaluations. Models for the hot form process are representative of theoretical data. Sensitivity analyses were conducted to account for the potential variances in environmental impact that could occur based on the collection of primary data for the hot form process.

## LCA BACKGROUND

This study was conducted to two main international standards: ISO 14040 and ISO 14044. An independent panel reviewed the study, its assumptions and the results and confirmed compliance to these two standards.

LCA Information important to note:

- Functional Unit: 1 square foot installed in a car
- LCA Software: SimaPro v9.1.1
- Primary secondary database used: ecoinvent v3.5 (cut-off methodology)
- Date of review: August 2021
- Primary data: 2020
- Impact Assessment Methodology: CML Baseline v3.06
  - TRACI (developed by US EPA) results were also developed
- Assumptions:
  - Cradle to Grave
  - Disposal assumed to be landfill

## APPENDIX: CML BASELINE V3.06 IMPACT RESULTS

IMPACT CATEGORY	(UNIT PER FT <sup>2</sup> )	ColdFORM™	HOT FORM	%Δ
Global Warming (GWP100a)	kg CO <sub>2</sub> eq	3.9E+01	5.2E+01	26%
Fossil Fuel Depletion	MJ	3.8E+02	5.1E+02	25%
Eutrophication	kg PO <sub>4</sub> eq	4.9E-02	6.6E-02	26%
Smog*	kg C <sub>2</sub> H <sub>4</sub> eq	7.2E-03	9.5E-03	24%
Acidification	kg SO <sub>2</sub> eq	1.6E-01	2.2E-01	26%
Ozone Depletion (ODP)	kg CFC-11 eq	4.7E-05	5.5E-05	14%
Cumulative Energy Demand	MJ	4.3E+02	5.8E+02	25%

\*Also called Photochemical Oxidation

## CORNING COMPANY OVERVIEW

Corning's sustainability journey began 170 years ago with an emphasis on safety, innovation, and community engagement. In recent years, we've expanded our scope to include a broader focus on renewable energy, reducing waste, and designing and manufacturing products with sustainable attributes in partnership with our customers.

We have always known that what we do today will determine how our world looks tomorrow and beyond. In our long-term vision, people are healthier. They're better informed. They're more richly connected with one another. We know that innovation, done our way, is sustainable only with a deeply engrained moral compass and the trust of our stakeholders. ColdForm™ Technology is just another step on this journey.



## WHAT IS CORNING® COLDFORM™ TECHNOLOGY?

Corning's patented ColdForm™ Technology uses optimized processes to bend and hold glass into its final shape – all at room temperature – at the end of the module assembly process.

This proprietary process means each step in manufacturing – from chemical strengthening to application of decoration and optical coatings and, finally, to shipping – is all done with flat pieces of glass, effectively reducing cost and energy spend.

By completing the manufacturing process in its flat state, Corning's finished glass part has uniform optical coatings, decoration, and is produced at high yields. This process efficiency can enable innovative curved display designs in a more economical and sustainable way versus traditional hot-forming methods, helping the automotive supply chain meet sustainability targets.