



SUPERIOR DURABILITY AT LOWER COST: Key Benefits of Carbon PEM Fuel Cell Bipolar Plates

For effective design and performance of PEM fuel cells, selecting the most appropriate material for bipolar plates is critical.

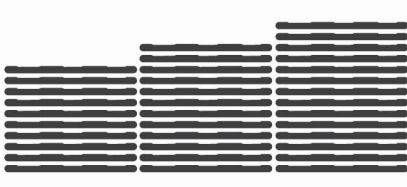
Here's why carbon bipolar plates are the superior choice:



METAL



CARBON



SUITABLE FOR
HIGH VOLUME PRODUCTION




**SAVE
\$3kW***
FOR PASSENGER
CAR FUEL CELLS




**SAVE
\$5kW***
FOR MEDIUM
DUTY VEHICLES

*USD Compared to metal, at high manufacturing volumes, according to cost study by Strategic Analysis, Inc.

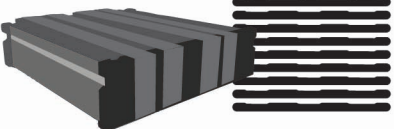



FUEL CELLS STACKS
USING CARBON PLATES
**30,000+
HOURS**
OF BUS OPERATION



NO
ADDITIONAL
COATINGS

10,000's → → →
BALLARD FUEL
CELL STACKS

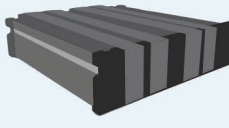




**10,000's
HOURS
PER
STACK**


BALLARD'S TECHNICAL ACHIEVEMENTS:

STACK POWER




>100kW

POWER DENSITY



>3.5kW/L

PLATE THICKNESS



< 1.0mm
(TWO PLATE ASSEMBLY)

WE TAILOR PLATE DESIGNS AND MATERIALS FOR:



**HIGH
DURABILITY**



**HIGH POWER
DENSITY
& LOWER WEIGHT**