Connectivity & joint stiffness

• Continuous members from engine room to rear floor in longitudinal direction
• Connections of floor, sides and roof form closed circular structures
• Main joints optimized by extensions and closed profiles
**Stiffness optimization**

* Cowl & dash panel
  - The formation of a closed section connecting the underbody, cowl area and suspension strut improves the stiffness of the front-area
  - This also increases the local stiffness of the suspension strut dome resulting in improved driving performance
**Stiffness optimization**

Rear quarter panel

- The vehicle rear end is reinforced by a double structure ring shape section
- The ring shapes are interconnected in longitudinal direction by the rear side members, waistline profiles and roof rails
Stiffness optimization

Roof rail

- The roof stiffness is increased by local extensions
- Optimized energy flow through maximized overlap
- Increased local stiffness through constant section profile
Stiffness optimization joining technology

- Application of 71m of structural adhesives leads to body stiffness increase of 14%
Material Concept

- MS (120 – 280 MPa)
- HSS (180 – 640 MPa)
- AHSS (220 – 720 MPa)
- UHSS (620 – 1280 MPa)
- PHS (980 -1260 MPa)
- Fibre reinforced plastic
Material concept

Hot Stamping (3.1%)

Ultra High Strength Steel (6.1%)
Safety

EuroNCAP rating

- Driver knee airbag is standard equipment
- Maximum score for side barrier impact
- Bumper area scored maximum points for pedestrian protection
- Speed limitation assistance is standard equipment for best selling variant

EuroNCAP comments:
Safety
Front impact

100% → 24%
11% → 12%
89% → 64%

20% → 4%
4% → 12%
80% → 14%
30% → 36%
Safety

Front impact

Connecting architecture between dash and A-pillar
Safety

Side impact

1.3%
13.2%
16.3%
12.0%
11.2%
21.1%
12.3%
12.6%
Safety
Pedestrian Protection

FRONT BUMPER LOWER STIFFNER
The combination of the lower stiffener and the bumper beam provide a minimum knee bending.

MULTI-CONE HOOD
The Multi-cone design of the inner hood panel allows an homogenous energy distribution.

OPEN TYPE COWL CROSS SECTION
Minimized pedestrian head injury through an open type design to allow cowl deformation.
### Insurance crash rating

**RCAR**

<table>
<thead>
<tr>
<th>Engine</th>
<th>Model</th>
<th>Last Result of Test</th>
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<td>Active Blue Drive (134hp)</td>
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<td>Premium (174hp)</td>
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### Product Concept
- World Car Concept
- Focused on local market customer demands
- Supporting Hyundai’s philosophy of “Modern Premium”
- Featuring Hyundai’s design language of “Fluidic Sculpture”

### BiW Concept
- Streamlined development process of 18 months
- CAE driven design for best performance and lowest cost
- Highly efficient use of High Strength Steels
- Excellent Light Weight Index to meet ecological demands
- Safe for Occupants and Pedestrians
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