

Technical Disclosure Commons

Defensive Publications Series

June 2021

One-Piece Woven Side Airbag with Float Pattern Vent

Anonymous

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation

Anonymous, "One-Piece Woven Side Airbag with Float Pattern Vent", Technical Disclosure Commons, (June 02, 2021)

https://www.tdcommons.org/dpubs_series/4347



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

One-Piece Woven Side Airbag with Float Pattern Vent

One Piece woven (OPW) technology is only being used in curtain airbags and more recently in center airbags. The use of this technology can be extended to side impact airbags to reduce the cost production per unit without compromising the bag performance. To do so, the OPW construction can be tailored to form bag features, such as tethers and vents, to enhance their performance.

Bag vents can be constructed by using float patterns in the OPW fabric that allow for airflow through the fabric. Floats are created when weft threads create a pattern by passing over (and covering) clusters of warp threads in a planned sequence, or *vice versa*. Float patterns creating vents allow the bag to vent without a discreet hole. Since the float pattern is woven, there is no need to laser cut holes, which saves time. Also, since it is woven, the float pattern vent will be resistant to increasing in size due to stretching, *etc.* during deployment. The floats also reinforce the vent, which can eliminate the need for separate reinforcing structures.

Alternatively, seams can be left open in the OPW construction, thus creating vent openings.

In either construction, the side airbag can include internal tethers formed integrally with the OPW bag construction. This would eliminate the need to sew specific tethers.

An example side airbag configuration is illustrated in the figure below. For reference, the figure illustrates a conventional vent, *i.e.*, an opening cut into the bag fabric, which would require the cutting step, along with any reinforcing or other steps, to manufacture. The example side airbag also includes a float pattern vent which, in the example configuration, extends along the periphery of the airbag and is indicated generally by cross-hatching. Because the float vent includes float yarns that extend across the vent, the area of the float vent might be greater than the area of the opening. Advantageously, the entirety of the float vent is constructed during the one piece weaving process, and no further manufacturing steps are required.

