

## **WORDS ABOUT WINDSCREENS**

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WORK IN PROGRESS BUT HERE IT IS

Windshield ergonomics are so simple it will seem stupid of me to bother to present them here. But given the amount of misinformation posted on the Internet, well, here goes.

Windshields relate to the following functional issues.

### 1. Noise

The main and almost obvious point about noise is that it mostly arises from wind noise (esp. turbulent air) in the proximity of your ears and your hearing can be protected either by having the stream go over your ears or well below your ears. Noise from mufflers or the absence of mufflers should be controlled at the source.

Yes, you can reduce noise by lowering your windscreen. But then you impair almost every other aspect of screen protection.

### 2. Protection from being hit by wet stuff and dry stuff

### 3. Air resistance

### 4. Something that can broadly be called riding ergonomics (weight distribution, seeing behind, postural consequences)

Also, there is forward vision, conspicuity to others on the road

Screens come almost any height and width you want.

### **Windscreen height, real and sort-of real**

The protection afforded by the windscreen depends on the height (duh). But, if my memory is correct, there exists a certain mounting angle — like 48 degrees — which optimizes flow, turbulence, and frontal resistance. Try to find that sweet-spot angle.

In addition to screen mounting angle, attaching various big and little things to the edge can also influence air movement. Devices like Laminar Flow attachments and Saeng edging have been used successfully to boost up the air flow and/or modify turbulence. However, these devices move the air around but do not (to the same extent) elevate rain, bugs, or flying gravel. Using Saeng edging, you can have good noise control by shooting the air stream over your helmet but still get a lot of bugs in your face. This is unlike raising the solid windscreen in order to raise the airflow that also protects you from bugs.

## **Safety**

First let me say that a windscreen collapsing in your direction is a safety hazard. But so is doing without a windscreen and getting beamed or otherwise molested by solid, liquid, and gaseous substances. And reduction of fatigue from a proper windscreen can save your life.

My impression is that windscreen materials (and possibly design) have to meet national regulations and that's good. Do it yourself windscreens might be made from materials just as good and designed with the same or better care; and if you really knew what you were doing and/or able to test your handiwork, it could be just as safe or better.

But if you have misgivings about your judgment regarding safety, don't make your own windscreen.

## **Making your own windscreen**

Few materials are as easy to work with as plastic for windscreens. You can buy acrylic, Plexiglas, Lexan, and other cousin-materials at your local plastic store. Or, you can buy an after-market windscreen and modify it.

There are many little secrets that will help you avoid cracks, chips, scratches, and the like. My personal good secret is bolting my portable belt sander upside down to a workbench out of doors in order to finely shape contours. Another secret is to leave extra space around certain mounting holes because plastic expands a lot with temperature. Another secret is you can bend sheets by just holding over your stove — wearing gloves of course. Or real nice shaping over a mold if you happen to have access to a pizza oven.