of periodic updating of its standards. In fact, SAE J593 was updated in June 1987, February 1995, and October 1995, three times in less than nine years. Thus, unless SAE changes the policy of regular updates, the value of the rulemaking effort requested by this petition soon would be negated by another update. While the agency acknowledges that industry standards must be updated to assure their relevance to technology and their value to users, periodic updating where few if any substantive changes are made may be counterproductive for use as Federal Motor Vehicle Safety Standards.

Allocation of agency resources and agency priorities also must be considered in processing what is the second petition from the SAE to update its standards directly or indirectly referenced in FMVSS No. 108. All of these standards have specific dated versions referenced in FMVSS No. 108. Because the SAE endeavors to update its standards on a regular schedule, the federal regulatory workload from such a course of updating would be continuous and drain resources from the Agency's identified priorities. This is not a desirable course. Nonetheless, NHTSA recognizes that the technical expertise of engineers from around the world participating in SAE Committee activities is invaluable to NHTSA's mission, particularly when performance requirements must be developed to accommodate new technologies.

As stated in the recent denial (61 FR 14044) on the first SAE petition to update references to SAE standards, NHTSA is considering how best to cooperate with SAE. The Agency has compiled and will provide on request, a reference document containing all the SAE and other organizations' standards that are directly referenced in FMVSS No. 108. The immediate effect is to make it easier for all interested parties, especially lighting and vehicle personnel, to have available the requirements in the Federal lighting standard. The agency recognizes the problem of finding older SAE standards, and takes this action as a short term solution to solve that problem. Together, this document of referenced standards and the current version of FMVSS No. 108 will provide our customers with as current a version of the lighting standard as is reasonable.

As a longer term solution, the Agency looks to SAE and our regulated partners to help find ways to make the more recent SAE documents be more acceptable from a regulatory burden and motor vehicle safety perspective, and to be longer lasting in their value. Thus, the agency will be favorably inclined to consider any future SAE or other petitioner's request that has significant safety benefit or when such action would remove impediments to the use of new technologies.

In accordance with 49 CFR part 552, this completes the agency's review of the petition. The agency has concluded that there is no reasonable possibility that the specific action requested by the petitioner would be issued at the conclusion of a rulemaking proceeding. Accordingly, it denies the SAE's petition.

Authority: 49 U.S.C. 30103, 30162; delegation of authority at 49 CFR 1.50 and 501.8.

Issued on: May 29, 1996.

Barry Felrice,

Associate Administrator for Safety Performance Standards.

[FR Doc. 96–13866 Filed 6–3–96; 8:45 am]

BILLING CODE 4910–59–P

---

49 CFR Part 571

[Docket No. 87–10; Notice 6]

RIN 2127–AF83

Federal Motor Vehicle Safety Standards; Power-Operated Window, Partition, and Roof Panel Systems

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation.

ACTION: Notice of Proposed Rulemaking (NPRM).

SUMMARY: In response to a petition from Prospects Corporation (Prospects), this document proposes to amend Standard 118, Power-Operated Window, Partition, and Roof Panel Systems, to accommodate power windows, partitions, and roof panels which automatically reverse when closing if an infrared system detects an object in or near the path of the closing window, partition, or panel. Since infrared systems may fail to detect an object the size of a very young child's finger, but can detect the child's hand, the agency is proposing to test those systems using a rod representing the side profile of a child's hand. The proposal also specifies the infrared reflectance of the rods used for testing those systems. This document also proposes to amend the requirements for systems that stop the window, partition, or panel before an appendage or other body part could become trapped by it by eliminating the requirement that those systems reverse after stopping. Reversal is not necessary unless there is a risk that a person may become trapped. In addition, this document requests comment on the safety of express-up power windows (i.e., power windows that fully close after a single, momentary touching of the window switch), because numerous callers to NHTSA have alleged that express-up windows exist and are unsafe.

DATES: *Comment Date:* Comments must be received by August 5, 1996

Effective and Compliance Dates: If adopted, the proposed amendments would become effective, and compliance required, 30 days following publication of the final rule.

ADDRESSES: Comments should refer to the docket and notice number of this notice and be submitted to: Docket Section, Room 5109, National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590. (Docket Room hours are 9:30 a.m.–4 p.m., Monday through Friday.)

FOR FURTHER INFORMATION CONTACT: The following persons by mail at the National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590:

For technical issues:

Mr. Richard Van Iderstine, Office of Crash Avoidance Standards, NPS–21, telephone (202) 366–5280, facsimile (202) 366–4329, electronic mail ''rvaniderstine@nhtsa.dot.gov''.

For legal issues:

Mr. Paul Atelsek, Office of the Chief Counsel, NCC–20, telephone (202) 366–2992, facsimile (202) 366–3820, electronic mail ''patelsek@nhtsa.dot.gov''. Please note that comments should be sent to the docket section rather than faxed to the contact persons.

SUPPLEMENTARY INFORMATION:

I. Background

Standard No. 118 regulates the safety of power windows, partitions, and roof panels. For the sake of simplicity, and because NHTSA anticipates that this proposal would primarily affect power windows, the agency collectively refers to these three systems as ''power windows'' in the preamble. However, the proposed changes apply equally to powered partitions and roofs. The standard addresses the threat to unsupervised children of being strangled or suffering limb-crushing injuries by closing power windows. Originally, the standard required that the activation of power windows be linked to an ignition interlock. The standard prohibited the activation of power windows unless the ignition key was in the ignition and turned to the ''on'', ''start'' or ''accessory'' position, based on the presumption that this precondition would ensure that a driver

was present to supervise children. Making the presence of the ignition key a precondition to power window activation also ensured that the driver is provided with a simple means of disabling the power windows of a parked vehicle, i.e., key removal. The power windows of most vehicles are still linked to an ignition interlock.

Over the years, the standard has been amended to permit power window closing in situations in which the key is not in the ignition, but the existence of adult supervision could be presumed for other reasons. In the most recent rulemaking, in 1991, NHTSA responded to the interest of manufacturers in offering remote controls for window closing. 56 FR 15290. In doing so, the agency was mindful that the unrestricted allowance of remote controls, especially ones that activated windows using radio frequency signals which can penetrate obstructing walls, could pose a danger to child occupants because the person activating the window might not be able to see a child in the window opening. Therefore, in an effort to ensure the presence of a supervising person, the agency amended the standard to permit power windows to be operable through the use of remote controls only if the controls had a very limited range, i.e., not more than 6 m. A longer range, up to 11 m, was permitted for controls that were operable only if there were an unobstructed line of sight between the control and the vehicle.

In addition, the agency reasoned that its provisions permitting the remote control of a power window need not be premised on the likely existence of supervision if the window were equipped with an automatic reversal system. If the window closing system itself could sense the child's hand or head when it became trapped between the window and the window frame, and thereupon stop and reverse to release the child, then supervision would not be required. Therefore, the agency also established a provision permitting power windows equipped with an automatic reversal system to be closed in any manner (e.g., with or without a key) desired by the manufacturer. It also permitted remote controls of unrestricted range as well as new products, such as devices to open and close windows automatically in response to heat and rain, since they would be made safe by the automatic reversal system.

To qualify as an automatic reversal system, a system had to reverse a power window, either before the window contacted, or before it exerted ''a squeezing force of 100 newtons on a semi-rigid cylindrical rod from 4 mm to 200 mm in diameter * * *'' The test procedure specified a range of rods to represent portions of a person's body, ranging in size from infant fingers to juvenile heads, inserted in the window openings. This procedure addressed the fundamental safety problem in terms of the level of squeezing force thought to be injurious. It allowed for contact with a test rod if reversal is triggered before the window exerts the injurious squeezing force on the test rod. Upon reversal, the window was required to open for the purpose of allowing easy extrication of a trapped head.

At the time of the most recent amendment, automatic reversal systems for power windows did not exist on U.S. vehicles. The most detailed comments on the amendment seemed to indicate companies were contemplating reversal systems triggered by force measurement. NHTSA assumed that manufacturers would produce power window reversal systems based on force sensing technology.

The development of automatic reversal systems has not proceeded as NHTSA anticipated. NHTSA currently is not aware of any force sensing systems currently being certified to meet FMVSS No. 118, suggesting that the manufacturers that had been considering force sensing systems may have found them to be undesirable or impractical.

NHTSA also sought to allow the use of proximity sensing systems by allowing automatic reversal systems that reversed the power window at any time before contact with the test rods. The agency attempted to word carefully the provisions regarding non-contact systems so as to avoid discouraging their development. A commenter on the 1991 amendment also indicated interest in developing reversal systems triggered by the blockage of light by the child's body (the principle used by automatic reversal mechanisms on some garage doors with remote controls). Accordingly, the agency drafted a test procedure that satisfactorily tests non-contact systems based on this principle.

The test procedure is less appropriate for non-contact systems based on other principles. Prospects Corporation has developed a non-contact automatic window reversal system which can detect the proximity of some portion of a person's body by sensing the reflection (instead of the blockage) of infrared light by a passenger's body. In Prospect's system, there are an infrared emitter and a detector within the interior of the vehicle that are not aligned with one another. When no object is present in or near the plane of the window, the detector receives a constant background level of infrared radiation reflected by the inside of the vehicle. In this situation, the window may safely close. However, when a child's hand, for example, approaches the window, the hand reflects a certain amount of additional radiation from the emitter to the detector. The detector senses the increase and electronically reverses the window even before the child's hand reaches the plane of the window.

To work well under the variety of foreseeable circumstances, an infrared reflectance system must be sufficiently sensitive to detect a variety of materials. Different materials (e.g., skin, hair, cloth, plastic) have characteristic abilities to reflect infrared radiation, a property called reflectance. The amount of radiation reflected is affected by the wavelength of the radiation, the angle of incidence of the radiation, the color and texture of the material, and the amount of surface area exposed.

Since the standard currently does not specify the infrared reflectance of the test rods, it cannot adequately assess the safety of an automatic window reversal system based on infrared reflectance. Use of a test rod with a higher reflectance than that of a child's hand might allow a system to pass NHTSA's compliance test even though that system might not be sufficiently sensitive to detect a child's hand placed in or near the window opening. Therefore, the agency has tentatively decided that the test procedure should be changed to specify the aspects of the test rods that are necessary for testing the compliance of infrared reflectance-based systems.

In proposing to amend the standard to provide for better testing of non-contact systems based on infrared reflectance, NHTSA recognizes that in the future there may be non-contact systems based on still other principles. However, the agency cannot propose to amend the standard to address those systems until their underlying principles are identified and adequately defined.

II. Size of the Target Inboard of the Window Plane

The standard currently specifies information about the sizes of the test rods that are appropriate for testing contact-based systems for compliance. The standard requires that the reversal system protect portions of a person's body, as represented by test rods ranging from 4 mm (about the size of an infant's finger) to 200 mm (about the size of a child's head) in diameter. Typical placements of the test rods are illustrated in drawings showing cylinders placed in various window and roof openings. The illustrations show

the portion of the rods inside the vehicle passenger compartment (the portion that would be used as a handle by the person conducting the test) as having the same diameter as the portion in the plane of the window. The standard requires that the part of the test rod exposed to window contact be protected over the full range of test diameters. There is no distinction made for the length or minimum diameter of the part of the test rod inboard of the window plane, even though the cross section of an infant's hand is larger than 4 mm.

Because it does not specify the size of the portion of the test rods that is inboard of the window (the area in or near the plane of the window when it is closed), the existing standard does not specify one of the most important test conditions for the reflective proximity detection scheme used by the petitioner. The petitioner's system provides reflective proximity detection by projecting infrared light across the inboard surface of the window, and using a sensor to detect the amount of light that is reflected by objects in the zone immediately inboard of the window. In the case of a child's hand in or reaching toward the window, the smallest object from the standpoint of reflective detection would be the hand, and not one of the fingers.

Prospects stated that its system may fail to detect the presence of the smallest rod, which is intended to represent an infant's finger. However, the petitioner believes that in reality its system would always protect infant fingers because it would detect the infant's hand. The petitioner suggested that the test rods be shaped like an infant's hand (measured across the palm) with a width of 28 mm.

NHTSA agrees with the petitioner that it is not appropriate to test the petitioner's device with a finger-sized target that is not connected with a representation of a hand, but does not agree with the use of a full hand width-size target. The infant could hold the palm of its hand on edge, i.e., in a plane parallel to the direction of the infrared radiation, and extend its finger. Therefore, to provide the minimum realistic reflective cross section, the hand should be represented with its full thickness (measured from the palm to the back of the hand) providing reflection to the sensor.

NHTSA tentatively concludes that a reasonable worst-case dimension for targets inboard of the plane of the window is 15 mm. The petitioner reports a thickness of at least 15 mm in the edge view of a 15 month old infant's hand. The agency considers this to be a reasonably conservative estimate. Newborn babies with somewhat smaller hands would be incapable of raising themselves up into an exposed position, and even the smallest hands would present a target wider than 15 mm in most orientations. Therefore, the test rods inside the window should not be less than 15 mm in diameter to provide a representative test of proximity sensing devices. Although the petitioner suggested a hand-shaped test rod, the use of cylindrical rods as targets remains desirable because it is easier to manufacture and removes the need to consider the orientation of the target along its axis.

III. Reflectance of the Target

A. Testing Methods

NHTSA also considered what level of reflectance would appropriately represent the clothed and unclothed hands and arms of young children. Reflectance is the ratio of the intensity of the light (measured by a detector as energy) reflected by the surface of a material to that of the light that strikes the surface of the material. An important objective of this proposal is to determine a reasonable value of reflectance for the test rods that NHTSA will use in compliance testing. The level of reflectance that NHTSA is proposing is based on experimental data the petitioner submitted (Prospects' report on the reflectance of skin and clothing is available in rulemaking docket number 87–10; Notice No. 6). NHTSA believes that the data generated by Prospect's laboratory test apparatus can be applied generally to in-vehicle detection systems based on infrared reflectance, and requests comment on this assumption.

Prospect's petition gave little detailed information on reflectance. Therefore, NHTSA asked the petitioner to address the question of reflectance in more detail. Because color affects reflectance, the reflective properties of skin of different shades and colors was of obvious importance, and the effect of color was also addressed by the petitioner. NHTSA also asked the petitioner to investigate whether gloves and other clothing would be more difficult to detect than bare skin.

The petitioner responded by providing measurements of the infrared light reflected from human skin and a large variety of leathers and fabrics. The measurements were conducted with an apparatus incorporating an infrared light source (nominal wavelength 950 nanometers (nm)) and a light sensor of the type used in the prototype window reversal system appearing in Appendix 1 of the petitioner's report. The apparatus projected infrared light on the skin or material sample and received the reflected (or scattered) light at an equal angle of reflection. The angle of incidence was 16 degrees. The distance from the source to the sample, and the distance from the sample to the light sensor, was the same, about 135 mm. The light reaching the sensor was measured with and without the sample in place, so that the light reflected from the sample holder could be discounted.

Although the light reaching the sensor can be thought of as having been reflected by the sample, it arrives by the combination of reflection from the surface of the sample and scattering by the texture of the sample. Since both the test apparatus and any in-vehicle devices that might be produced measure the sum of reflection and scatter, there is no need to distinguish between the two mechanisms which result in light reaching the sensor. Therefore, the term ''reflection'' is used below in a broad sense to refer to all light reaching the sensor as a consequence of the presence of the sample.

NHTSA's test procedures should be as general and as design-independent as possible, to avoid restricting vehicle manufacturers' choices. Prospects' tests compared the infrared reflectance of various portions of a person's body and clothing materials and found relative reflectance relationships that ought to hold true for infrared reflectance-based detection systems in general. However, the absolute numerical results (in terms of microwatts of power received by the sensor) are specific to the particular test apparatus used by Prospects. NHTSA discussed with the petitioner the need to express the infrared reflective properties of skin and other material in terms that are not specific to a particular light source and sensor.

A reasonable solution was found in the use of a high reflectance mirror as a comparison medium. A mirror that reflects 99.99 percent of infrared light was mounted in the apparatus as a sample. The presence of the mirror caused the infrared sensor to receive 47 microwatts. The power measured with the sample materials was divided by this power and the resulting ratio was multiplied by 100 percent to produce a value that is characteristic of each sample. When normalized by the mirror measurement in this way, the skin and material measurements become independent of the power, beam size and dispersion of the light source and the size and sensitivity of the infrared sensor.

This method of normalizing the power measurements also has the

benefit of producing results of general utility, regardless of the size of the sample. The sensitivity of the reflectance determination to changes in the light path length of the apparatus is low because measurements using the sample and the mirror would be affected in the same proportion by a change in light path length. Therefore, the length of the light path need not be specified.

However, NHTSA is specifying the angles of incidence and reflection to be used when determining the reflectance of test rods, in order to avoid changes in the relative composition of reflected and scattered light from textured samples. The agency notes that specifying these angles does not restrict vehicle design in any way, but only defines the parameters to be used when producing test rods.

B. Test Results

In order to test skin for reflectance values, Prospects had different people place their hands against the back of the sample holder. The skin of White, Black and Asian persons was measured at the back of the hand and at the palm. Three individuals of each race were measured. The macro-texture of the palms and backs of hands can be presumed to affect the relative contribution of reflection and scatter. The range of reflectance from the palms of hands was from 2.43 to 2.96 percent, and the range for the skin on the back of the hand was from 2.04 to 2.83 percent. The total range of 2.04 to 2.96 percent for differences between races, individuals and hand orientation was very small compared to that of common fabrics, as can be seen from the following results.

In response to NHTSA's concern about the reflectance of various skin coverings, Prospects tested thirty-seven samples comprising various colors, textures and types of fabric and leather, including wool, silk, cotton, polyester, and a 35 percent cotton/65 percent polyester blend. The range of reflectance of the fabric and leather samples was from 0.70 to 6.09 percent. With the exception of three samples, the fabrics and leathers were more reflective than skin. The worst case was a black cotton/polyester material which reflected about ⅓ the amount of infrared light reflected by human skin. Figure 8 of the petitioner's report summarizes the range of material reflectance (Docket No. 87–10; Notice No. 6). The large variety of skin and potential skin-covering materials Prospects tested appears to provide a good representation of foreseeable detection targets.

The narrow range of reflectance for skin despite differences in individuals, races, and part of body indicates that infrared skin reflection is not very sensitive to common variables including the lack of ''flatness'' of hand samples. This validates the ability of the infrared reflectance proximity sensor to detect its primary target, skin. It is also encouraging that most clothing materials appear to improve the infrared reflectance of the body. However, at least one common material would reduce the reflectance of the body by two thirds.

NHTSA is proposing a minimum reflectance of 0.7 percent for the test rods. This is a conservative value which equals the minimum reflectance of black cotton/polyester. That material had the lowest reflectance in Prospects' experiment. Bare skin, at about 2–3 percent reflectance, is three times more detectable.

Manufacturers should have little difficulty producing test rods with the proper reflectance. The reflectance of the surface material of NHTSA's test rods would be tested using an apparatus similar to the one used by Prospects. However, as discussed above, there is considerable flexibility in the construction of the test apparatus. Only the wavelength of the source and the angles of incidence and reflection would need to be kept constant.

IV. Protection of Persons Outside the Vehicle

Since paragraph S5 of Standard No. 118 relieves power windows systems with automatic reversal from the presence-of-supervision-assuring restrictions of S4, NHTSA should consider whether protection is provided for a person who is outside the vehicle and is reaching toward or into the vehicle. It cannot be assumed that an infrared proximity detector will operate on objects shielded by window glass, thus only portions of a person's body inside the window would be capable of triggering it under this proposal.

There are a number of reasons to believe that this is not a great danger. Small children inside vehicles can reach the pinch points (the area where the window and window frame meet) by standing on the seat, but a child standing on the ground outside the vehicle must be considerably older and taller to reach most pinch points. The agency expects that even the single bare finger of a child of that size would be detected. Even if a bare finger is much smaller than the proposed test rod diameter of 15 mm, it would likely be detected because the reflectance of skin is so much greater than the proposed test rod. A child holding the edge of the window would offer an even larger target for detection, the width of his or her palm, and a child leaning into the vehicle so that his or her head is in the window would certainly be detected and protected.

However, it would be possible for a person willfully to ''fool'' the detector by placing just the tip of a finger on the outside upper edge of the window as it shuts. In that location, the finger tip could be shielded from the infrared emitter. (Recall that this situation is possible only for persons outside the vehicle because fingers of a vehicle occupant cannot get to the pinch points without exposing the hand to detection.) The most likely occasion for such abuse involves a child inside the vehicle operating the windows in playing ''chicken'' with another child outside the vehicle.

The agency recognizes the possibility of abuse of the system but believes that the possibility is not serious enough to warrant declining to facilitate the use of power window systems with infrared sensors. This belief is based on the assumption that manufacturers would not make automatic window closing possible in the absence of the ignition key except possibly for rain protection or for a limited time after key removal. NHTSA requests comments on the validity of this assumption. In addition, children who can reach the top of the window from the ground are old enough to possess some level of experience and judgment, and a very slight withdrawal motion is all that is necessary for self-protection.

V. Presumption of Supervision

Although not raised in the petition submitted by Prospects, many callers to this agency have expressed certain reservations about the safety of the existing standard. Accordingly, NHTSA is using this document to take the opportunity to request comments on these concerns. This is especially appropriate in light of the consideration that the agency is giving to making the standard more permissive.

The safety of children depends on driver supervision when power windows close in the modes permitted by section S4. However, there are some design possibilities not prohibited by S4 that can reduce either the likelihood or the effectiveness of driver supervision. The standard allows window closing with the ignition key in the ''accessory'', as well as in the ''on'' and ''start'' positions. Drivers may be tempted to leave unattended children in a vehicle with the key in the ''accessory'' position in order to operate the vent fan or the radio, thus failing to maintain supervision of the power windows. Drivers need to supervise children in

the rear seat, but vehicles are not required to have a driver controlled lock-out of the rear power windows. Many vehicles are designed to avoid these potential problems, but designs that exceed the safety standard are not universal. Is the presumption of supervision a valid one?

Some callers have questioned the safety of a convenience feature that they say some manufacturers are offering, i.e., an ''express up'' closing mode, which requires only a momentary switch contact rather than continuous activation to close the window. No caller reported any injuries associated with this feature. NHTSA is aware of such systems on a few of the most expensive German cars. In all of these cases, the express-up windows are also equipped with automatic reversal (although these reversal systems may not pass the requirements of FMVSS No. 118). It is possible that part of the interest by vehicle manufacturers in infrared proximity detectors is motivated by a desire to assure the safety of express-up windows. If the agency proceeds to a final rule, the agency will consider while writing the forthcoming final rule whether to propose that express-up operation of windows, other than the driver's, should be excluded from the closing modes of S4, which presume driver supervision and, by implication, some level of control. These thoughts are offered in the questions to commenters below to guide possible future rulemaking.

VI. Need for Reversal

The existing standard requires that closing power windows halt to avoid applying excessive squeezing force on a passenger, and then reverse their travel to release the person. The reversing requirement is necessary when the halting of a window is triggered by a force measurement because, otherwise, the squeezed person might remain trapped by the window.

Although the petitioner did not question the application of the reversal requirement to a window equipped with an infrared sensor, it appears that it may not be necessary to apply the requirement to all infrared sensing systems since most of these systems would detect objects in a large zone and would ensure safety by merely halting. Devices which halt power windows by detecting limbs and heads interior to the plane of the powered window opening and in a wide detection area around the pinch zone will halt the windows *before* the body enters the pinch zone, eliminating the possibility of trapping. A three-dimensional detection zone extending from the window frame 100 mm into the opening and extending horizontally inboard into the interior of the vehicle 50 mm from the interior surface of the closed window would probably be sufficient to prevent trapping by halting the window alone. Therefore, NHTSA proposes that non-contact window systems which detect proximity of persons over such a large interior space, thereby halting the window before the person enters the pinch zone, be relieved of the necessity of reversing as well.

It is not necessary for non-contact systems to detect the proximity of persons over such a large range of space to prevent injury. Even a system sensitive in a narrow zone only a few millimeters below the window frame would prevent contact. However, a window whose detection system has such limited sensitivity must be able to reverse to avoid the possibility of trapping a child's head.

VII. Questions for Commenters

A. The proposed test rods would combine a reasonable worst case target size (15 mm) with a reasonable worst case reflectance (0.7 percent). If there is an even more appropriate combination of factors, please explain what these factors are and why they are better than the proposed factors. If one considers the target size of 15 mm as indicative of bare limbs, would a maximum reflectance of 1 percent be adequate? A reflectance of 1 percent is half the reflectance of skin and thus would provide a factor of safety of 2 relative to bare skin. Is the proposed 0.7 percent reflectance (a factor of safety of 3) necessary to ensure that persons outside the vehicle are adequately protected?

B. Can prototype infrared proximity systems detect a target combining the worst case size (15 mm) and worst case reflectance (0.7 percent) at all points near the frame of a large side window? Would its performance be hindered by bright sunlight or other infrared sources? What other factors might limit the effectiveness of infrared systems? How should the agency guard against the effects of those factors?

C. The information submitted to the agency concerning the reflectance of skin and the relative reflectance of skin and clothing was obtained using infrared light of a nominal 950 nm wavelength. While the agency endeavors to make standards as simple and general as possible, it has no basis to assume that this reflectance information is applicable to infrared light of significantly different wavelengths. Therefore, the proposed compliance tests are limited to infrared devices operating at wavelengths of 950 nm +/- 100 nm. Is there any evidence that significantly different reflectance properties would be manifested within that narrow range of infrared wavelengths? Would a two hundred nanometer range be sufficient to avoid unduly restricting manufacturer's choice of equipment? Is there any reason to believe that manufacturers would prefer to have infrared devices operating at different parts of the infrared spectrum? Are there any data showing that devices in other areas of the spectrum would provide an equivalent level of safety?

D. Would the 16 degree angle of incidence/reflection used in the Prospects study be appropriate for testing the reflectance of materials? Are there any data indicating that the angle is critical to the strength of either the reflection or scattering components of the detected light? Are other angles more appropriate?

E. NHTSA is proposing that compliance testing be done in direct sunlight so that the in-vehicle sensors are exposed to the highest possible background ''noise'' level of extraneous infrared light. This should make the test more demanding because small differences in the amount of infrared radiation reaching the detector should be harder to perceive against a higher background level. NHTSA requests comment on whether this is a valid assumption and whether other extraneous factors can affect the safe functioning of such in-vehicle infrared detection systems.

F. The safety of children depends on driver supervision when power windows close in the modes permitted by section S4. The standard allows window closing with the ignition key in the ''accessory'', as well as in the ''on'' and ''start'' positions. Drivers may be tempted to leave unattended children in a vehicle with the key in the ''accessory'' position in order to operate the vent fan or the radio, failing to maintain supervision of the power windows. Drivers need to supervise children in the rear seat, but vehicles are not required to have a driver controlled lock-out of the rear power windows. Many vehicles are designed to avoid these potential problems. What current production vehicles have power window operation with the key in the ''accessory'' position or have rear power windows without a driver controlled lock-out? Do they present safety problems needing regulatory attention? Is there any evidence of a safety problem?

G. The standard does not regulate the express-up closing mode which requires

only a momentary switch contact rather than continuous activation to close the window. Should windows that have the express-up operation be prohibited from closing in the modes specified in S4, which presume driver supervision? What production vehicles, if any, have express-up window operation and on which windows is it applied? Is there any evidence that express-up windows represent a safety problem?

NHTSA is proposing to make the proposed amendments effective 30 days after publication of a final rule. Compliance with the requirements would be required by manufacturer's offering infrared reflectance-based window systems on the same date. NHTSA believes that there would be good cause for such an effective date since the amendments would not impose any new requirements but instead relieve a restriction.

VIII. Rulemaking Analyses and Notices

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

This rulemaking document was not reviewed under E.O. 12866, ''Regulatory Planning and Review.'' This action has been determined to be ''non-significant'' under the Department of Transportation's regulatory policies and procedures. The proposed amendments would not impose any new requirements, but simply provide additional detail to the test procedures so that a new technology may be tested, thus allowing manufacturers to certify vehicles employing these technologies as meeting the existing requirements. Therefore, the impacts of the proposed amendments would be so minor that a full regulatory evaluation is not required.

B. Regulatory Flexibility Act

NHTSA has also considered the impacts of this notice under the Regulatory Flexibility Act. I hereby certify that this proposed rule would not have a significant economic impact on a substantial number of small entities. As explained above, the rule would not impose any new requirements but would instead relieve a restriction resulting from a lack of specificity in the current requirements. The infrared sensing technologies that may be permitted as a result of this proposal are only likely to be offered on a small number of vehicles produced by major automobile manufacturers.

C. Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1980 (Pub. L. 96–511), there are no requirements for information collection associated with this proposed rule.

D. Executive Order 12612 (Federalism)

NHTSA has analyzed this proposal in accordance with the principles and criteria contained in E.O. 12612, and has determined that this proposed rule would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

E. Civil Justice Reform

This proposed rule would not have any retroactive effect. Under 49 U.S.C. 30103, whenever a Federal motor vehicle safety standard is in effect, a State may not adopt or maintain a safety standard applicable to the same aspect of performance which is not identical to the Federal standard, except to the extent that the state requirement imposes a higher level of performance and applies only to vehicles procured for the State's use. 49 U.S.C. 30161 sets forth a procedure for judicial review of final rules establishing, amending or revoking Federal motor vehicle safety standards. That section does not require submission of a petition for reconsideration or other administrative proceedings before parties may file suit in court.

IX. Submission of Comments

Interested persons are invited to submit comments on the proposal. It is requested but not required that 10 copies be submitted.

Comments must not exceed 15 pages in length (See 49 CFR 553.21). Necessary attachments may be appended to these submissions without regard to the 15-page limit. This limitation is intended to encourage commenters to detail their primary arguments in a concise fashion.

If a commenter wishes to submit certain information under a claim of confidentiality, three copies of the complete submission, including purportedly confidential business information, should be submitted to the Chief Counsel, NHTSA, at the street address given above, and seven copies from which the purportedly confidential information has been deleted should be submitted to the Docket Section. A request for confidentiality should be accompanied by a cover letter setting forth the information specified in the agency's confidential business information regulation. See 49 CFR Part 512.

All comments received before the close of business on the comment closing date indicated above for the proposal will be considered, and will be available for examination in the docket at the above address both before and after that date. To the extent possible, comments filed after the closing date will also be considered. Comments received too late for consideration in regard to the final rule will be considered as suggestions for further rulemaking action. Comments on the proposal will be available for inspection in the docket. NHTSA will continue to file relevant information as it becomes available in the docket after the closing date, and it is recommended that interested persons continue to examine the docket for new material.

Those persons desiring to be notified upon receipt of their comments in the rules docket should enclose a self-addressed, stamped postcard in the envelope with their comments. Upon receiving the comments, the docket supervisor will return the postcard by mail.

List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles.

In consideration of the foregoing, it is proposed that 49 CFR part 571 be amended as follows:

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

1. The authority citation for part 571 of Title 49 would continue to read as follows:

Authority: 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.50.

2. Section 571.118 would be amended as follows:

a. S3 is amended by adding a new definition in alphabetical order.

b. S5 is revised.

c. S6 is added.

d. Figure 2 is added to the end of the section, following Figure 1.

The additions and revisions would read as follows:

§ 571.118 Standard No. 118; Power-operated window, partition, and roof panel systems.

* * * * *

S3. *Definitions.*

* * * * *

Infrared reflectance means the ratio of intensity of infrared light reflected and scattered by a flat sample of the test rod material, to the intensity of infrared light incident on that material, as measured by the apparatus shown in Figure 2.

* * * * *

S5. (a) A power operated window, partition, or roof panel system that meets the requirements in paragraphs (1) through (2)(iii) may close in

circumstances other than those specified in S4—

(1) Except as specified in S5(b), while closing, the window, partition or roof panel system must halt and reverse direction either before

(i) Contacting, or

(ii) Exerting a squeezing force of 100 newtons or more on a semi-rigid cylindrical rod that has the properties described in S6(b), and that is placed through the window, partition or roof panel system opening at any location, in the manner described in S6(a); and

(2) Upon such reversal, the window, partition or roof panel system must open to one of the following positions, at the manufacturer's option:

(i) A position that is at least as open as the position at the time closing was initiated;

(ii) A position that is not less than 125 millimeters more open than the position at the time the window reversed direction; or

(iii) A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening at the same contact point(s) as the rod described in S5(a)(1).

(b) A closing window, partition, or roof panel system need not reverse direction as required in S5(a)(1) if it can halt upon entry of any portion of a 15 mm cylindrical test rod at any location within a zone bounded by:

(i) The interior surface of the closed window, partition, or roof panel,

(ii) A surface 50 mm inboard of that surface,

(iii) The portion of the window, partition, or roof panel frame that the window, partition, or roof panel closes against, and

(iv) A surface 100 mm from that part of the frame.

(c) If a vehicle uses the principle of proximity detection by infrared reflection to halt the powered window, partition, or roof panel before it contacts the test rod, the infrared source shall project infrared light at a nominal wavelength of not less than 850 and not more than 1050 nm.

S6. Test procedures for determining compliance with S5.

(a)(1) For testing power window, partition, or sunroof systems designed to detect contact with the test rod, place the test rod through the window, partition, or roof panel opening from the inside of the vehicle such that the cylindrical surface of the rod contacts any part of the structure with which the window, partition, or roof panel mates. Typical placements of test rods are illustrated in Figure 1. Attempt to shut the power window, partition, or roof panel.

(2) For testing power window, partition, or sunroof systems designed to detect the proximity of the test rod using infrared reflectance and to halt the powered window, partition, or roof panel before it contacts the test rod, this test is conducted with the vehicle in direct sunlight. Place a stationary test rod anywhere in the window, partition, or roof panel opening, with the window, partition, or roof panel in any position. Attempt to close the window, partition, or roof panel. Remove the test rod. Fully open the window, partition, or roof panel and then begin to close it. While the window, partition, or roof panel is closing, move a test rod so that it approaches the window, partition, or roof panel, or its frame, in any orientation from the interior of the vehicle.

(b) Test rods.

(1) Test rods are of cylindrical shape in the range of diameter from 4 mm to 200 mm, except that a single 15 mm diameter rod shall be used to test power window, partition, or sunroof systems that detect the proximity of a test rod using infrared reflectance.

(2) For testing power window, partition, or sunroof systems that detect contact with the test rod, the force-deflection ratio of the test rod is not less than 65 N/mm for a rod 25 mm or smaller in diameter, and not less than 20 N/mm for a rod larger than 25 mm in diameter.

(3) For testing power window, partition, or sunroof systems that detect the proximity of the test rod using infrared reflectance, the test rod shall meet the following requirements:

(i) The infrared reflectance of the rod surface material is not less than 0.7 percent, when measured using the apparatus shown in Figure 2.

(ii) The infrared reflectance of the rod surface material is measured using a flat sample and an infrared light source and sensor operating at a nominal wavelength of 950 nm.

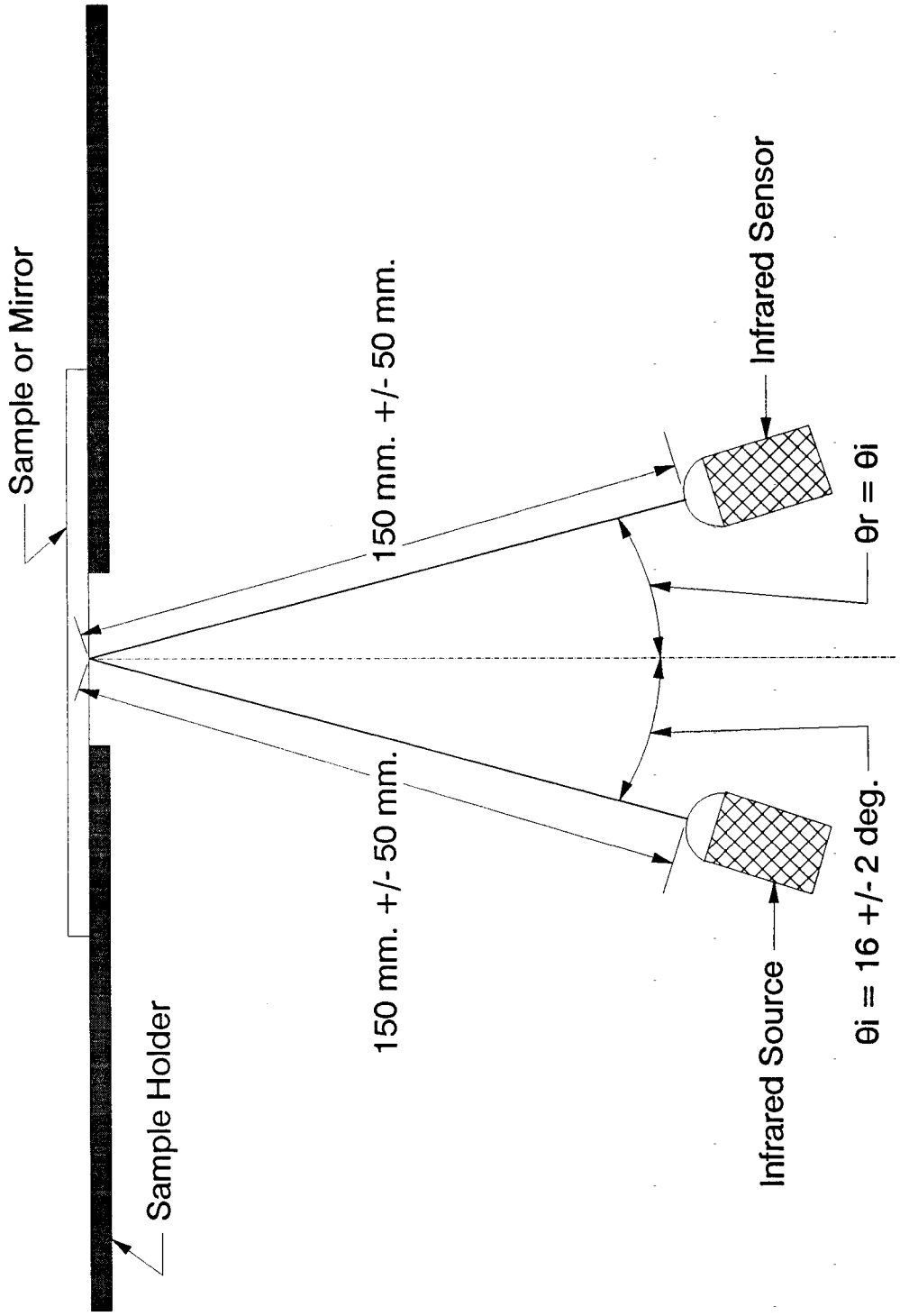
(iii) The intensity of incident infrared light is determined using a mirror of nominally 100 percent reflectance mounted in place of the sample.

(iv) Measurements of the test rod surface sample and the mirror are corrected to remove the contribution of infrared light reflected and scattered from the sample holder and other parts of the apparatus before the computation of the ratio.

* * * * *

BILLING CODE 4910–59–P

FIGURE 2 - REFLECTANCE TEST APPARATUS



Issued on: May 29, 1996.

Barry Felrice,

Associate Administrator for Safety Performance Standards.

[FR Doc. 96–13864 Filed 6–3–96; 8:45 am]

BILLING CODE 4910–59–C