



*Natural building blocks for quality of life*

**National Stone, Sand & Gravel Association**  
**Comments on MSHA's Guide to Equipment Guarding**  
**(Draft, Rev. 2003)**  
**September 29, 2003**

All of the statements incorporated in the guidebook should be intended to be recommendations or proving guidance and should in no way be used as an enforcement tool.

**Guarding Considerations & Recommendations (p.4-5)**

MSHA Statement: "Do the design, construction, selection, of materials and guard installation prevent contact with all moving machine parts?"

NSSGA Response: The statement should emphasize unintentional contact by incorporating the following revision, "Do the design, construction, selection, of materials and guard installation prevent *unintentional* contact with all moving machine parts?"

MSHA Statement: "Is the guard constructed so that it can not be easily circumvented, by-passed or overcome? "Reference: Program Policy Manual: **56/57.14107** Moving Machine Parts. This standard is to be cited when a guard at conveyor locations does not extend a distance sufficient to prevent any parts of a person from getting behind the guard and becoming caught, or in those instances when there is no guard at the conveyor-drive, conveyor-head, conveyor-tail, or conveyor take-up pulleys."

NSSGA Response: The statement should again emphasize unintentional contact by incorporating the following revision, "Is the guard constructed so that it cannot be easily circumvented, by-passed or overcome and that moving parts cannot be *unintentionally* contacted? This standard is to be cited when a guard at conveyor locations does not extend a distance sufficient to prevent *unintentional* contact by a person getting behind the guard and becoming caught, or in those instances when there is no guard at the conveyor-drive, conveyor-head, conveyor-tail, or conveyor take-up pulleys."

#### **Figure 4 (p.9)**

NSSGA Response: The text for this illustration refers to a return roller, but it shows a “bend roller or bend pulley”. It is recommended that the illustration be changed to appropriately identify the hazard described in the text. The image depicted in this figure does not appear to be a return roller and needs to be properly identified. An appropriate illustration of this hazard at a return roller needs to be shown separately, or the text changed to point out that they are similar. Figure 4 does show a serious hazard. There is also an unguarded take up pulley in the illustration. The agency needs to show how to guard this equipment so miners can’t access the area. This is one place where an area guard is very appropriate.

#### **Figures 5, 6 & 7 (p.10)**

NSSGA Response: There needs to be better illustrations used on this page that show various types of effective guards that do not plug up. Figures 6 and 7 appear to be truss conveyors, and the agency does not normally require return rollers to be guarded on them. The illustrations need to be limited to channel conveyors or a truss conveyor that clearly shows a potential for accidental contact with rollers. Change text to point out that each situation can be different. One type guard does not fit all situations. In some cases, return rollers only need to be guarded on the sides. However, some rollers need to be enclosed on the sides, the leading edge, and on the bottom to prevent accidental contact. There are exceptions where these rollers need guarding to prevent unintentional contact, but again each situation is different. The illustrations depicted in Figures 6 & 7 could also fill up with fines creating maintenance, which could result in additional hazards.

#### **Figure 9 (p.11)**

MSHA Statement: “The head pulley guard in Figure 9 is constructed so the pinch points, drive shafts, and V-belts cannot be contacted.”

NSSGA Response: The statement should place an emphasis on unintentional contact by incorporating the following revision, “The head pulley guard in Figure 9 is constructed so the pinch points, drive shafts, and V-belts cannot *unintentionally* be contacted.”

The illustration needs to show the guard extend far enough to prevent unintentional contact.

#### **Figure 10 (p. 13)**

MSHA Statement: “Figure 10 shows an emergency stop cord along a conveyor belt with a walkway. The stop cord should be located so that it can be reached by a person who falls on or against the belt. The stop cord must also be sufficiently tight to assure the conveyor drive motor will be readily deactivated when the cord is pulled. The stop cord

can be used when the walkway is part of the conveyor, or where persons travel alongside unguarded conveyors at ground level.”

*NSSGA Response:* We recommend the following statement, “Figure 10 shows an emergency stop cord along a conveyor belt with a walkway. The stop cord should be located so that it can be **“activated”** by a person who falls on or against the belt. The stop cord must also be sufficiently tight to assure the conveyor drive motor will be readily deactivated. The stop cord can be used when the walkway is part of the conveyor, or where travel ways are alongside conveyors at ground level. A statement should be also be included at the end of the description for Figure 10 referencing where stop cords are installed periodic testing should be used as a best practice.

**Figure 13 (p.16)**

*NSSGA Response:* The text on this page needs to make it clear that the top area along the bend pulleys (where the individual depicted hand is resting) need to be evaluated to determine if unintentional contact can be made. If it is possible, it needs to either be enclosed or raised to prevent unintentional contact. A statement should be incorporated to say, “Make sure the bend pulley in-running nip point (area behind the individual’s right leg) is adequately protected against unintentional contact. If the guard does not extend far enough, someone could unintentionally contact with the nip point.

**Figure 14 (p.17)**

*MSHA Statement:* “The moving machine parts of take-up pulleys are often located a sufficient distance above the ground to prevent contact, and are therefore considered guarded by location. They may be equipped with heavy counterweights that pose a suspended load hazard. Precautions, such as the guard in Figure 14, should be taken to prevent access below the suspended load.”

*NSSGA Response:* Figure 14 and its respective text should mention and depict safety cables to prevent someone from coming into contact with the moving parts of the take-up pulley, if they were to fall from an elevated level. Clarification should also be made that if the gravity take up pulley can be unintentionally contacted by body parts, tools, equipment, etc., it needs to be elevated or guarded.

**Figure 17 (p.19)**

*MSHA Statement:* “Figure 17 shows a drive coupling. Couplings must be enclosed to prevent contact. An example guard is shown in Figure 18.”

NSSGA Response: The statement should emphasize accidental contact by incorporating the following revision, “Figure 17 shows a drive coupling. *When there is a potential for unintentional contact, couplings must be enclosed to reduce the risk of exposure to moving parts.* An example guard is shown in Figure 18.”

**Figure 20 (p.21)**

NSSGA Response: The illustration depicted in Figure 20 shows exposed shafts on the backside of the pulley system. The figure should either be redrawn or incorporate changes that reflect a change to prevent unintentional contact with moving parts such as exposed shafts.

**Area Guarding Section (p.27)**

NSSGA Response: The mesh depicted in this figure is redundant; the guardrails should provide sufficient protection as with belts based on the distance of the pinch points of the “sand screws”. There are no maintenance issues or reasons for any employee to reach into the areas between the guardrails.

The list of requirements needs to include a question asking if daily or routine tasks such as servicing, greasing, applying belt dressings, checking bearings, etc. are performed outside of the guarded area.

**Figure 31 (p.30)**

NSSGA Response: The agency should clarify that there is no access to the backside of the machinery through additions to the illustration or additional wording to the text for the description.

**Figure 32 (p.30)**

NSSGA Response: The last paragraph for Figure 32 suggests that maintenance of the chutes can be performed without properly locking and tagging out equipment. This might represent a conflict in a company’s policy for lockout / tagout procedures. We suggest this statement is removed from the guidebook. Also the rollers shown in the figure are not guarded at the skirt boards and this poses a potential hazard. Someone could perform maintenance on chutes from a ladder where a fall could pose a major hazard problem if the belt is moving.

We recommend that where “lockout / tagout procedures” are mentioned within the text of the guidebook that it be replaced with “proper lockout procedures”.

