Section 1 - PURPOSE

1.1 To define the procedure for inspection and repair of damage to RS Pole Modules.

Section 2 - SCOPE

2.1 This procedure applies specifically to RStandard™ Modular Composite Poles that have been damaged during shipment to the customer, or damaged while in service after installation.

2.2 This work instruction is only valid if the RStandard Pole/Structure has been installed in accordance with all RS provided specifications, details, documents, procedures, etc.

Section 3 - DEFINITIONS

3.1 **Warranty** – refers to the RStandard™ 41-year Warranty against manufacturer's defects, which stipulates that RS will provide a replacement pole or module at no additional charge to the customer if a defect is reported and verified within 41 years of the date of delivery of the pole or module to the customer (see full RStandard™ 41-year Warranty document for details).

3.2 **Guarantee** – refers to the RStandard™ Lifetime Guarantee on its poles, which stipulates that RS will replace any pole that fails as a result of the direct physical loads imposed by ice, snow, wind or lightning strikes (see full RStandard™ Lifetime Guarantee document for details).

3.3 **RS Responsibility**: RS ensures that all RStandard™ modules leave the production facility in good condition. If the modules and related accessories arrive at the customers premises damaged then it is the customer's responsibility to engage the carrier for damage claims. RS is not responsible for damage incurred in transit.

3.4 **Customer Responsibility**: It is the customer's responsibility to ensure that when the pole modules and related accessories are unloaded from the carrier's vehicle, all material has been received in good condition. If there is apparent damage to the material, it is the customer's responsibility to make note of the damage and inform the carrier of the damage. At this point it is the customer's responsibility to engage the carrier for damage claims. RS is not responsible for damage incurred in transit.

Section 4 - EQUIPMENT AND SAFETY

4.1. Safety Notes

4.1.1 Always follow manufacturer's instructions when operating any equipment.

4.2. Safety Equipment

4.2.1 As required, hard hat, safety glasses, leather gloves. Please consult your Local and Corporate H&S group for any additional local requirements. Ensure all OH&S policies are followed.

4.3. Tools Required
- 4.3.1 Digital Camera with macro feature, if pictures are required.
- 4.3.2 High Quality Spray Polyurethane, if minimal intervention is required.
- 4.3.3 RS Pole Disassembly Kit, Refer to WI-7014; if replacement is required.
- 4.3.4 Tools indicated in RStandard Assembly and Installation Guide.

Section 5 - PROCEDURE

Note: The intention for this Work Instruction is to provide a guideline for customers regarding the recommended procedure for assessing and dealing with damaged RStandard™ Poles. The damages will be divided into three separate categories, and each category will have separate instructions to follow. The three separate categories are as follows:

- **Superficial Damage** - Requiring no or minimal further intervention
- **Surface Damage** - Requiring further investigation and possible intervention
- **Structural Damage** - Requiring module and or pole replacement

5.1. Superficial Damage

5.1.1 Superficial Damage can be described as damage to the outermost layers of the pole; those layers are commonly referred to as the aliphatic layers. This type of damage is usually a result of product mishandling in shipment or on site. It is vitally important to protect the pole with dunnage or other appropriate “cushions” during product shipment to the construction site, and during assembly in the erection process. Please refer to RS document RStandard Installation Guide V2.2a (for your region) for complete installation instructions.

5.1.2 **No Repair Required:** Very light superficial damage to the aliphatic layers of little consequence can be ignored. Please refer to Figure 1 to assist in your damage evaluation.

Figure 1 - Light Superficial Damage (Scratch)

5.1.3 **Repair Required:** Slightly more surface damage that will require very minimal repair. Please refer to Figure 2 to assist in your damage evaluation.

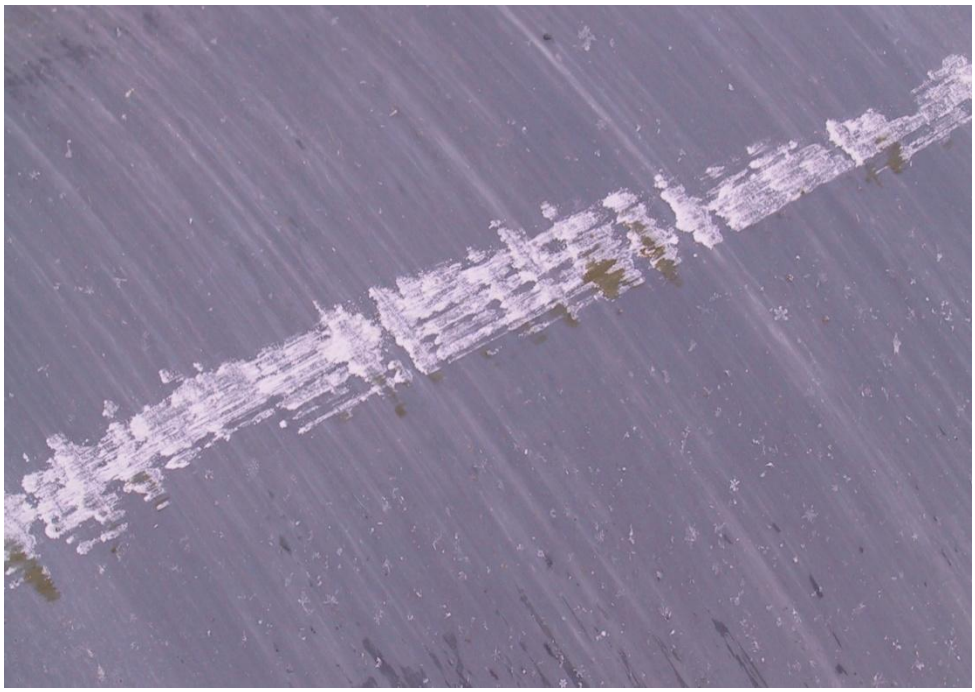

Figure 2 - Superficial Damage Intervention Required

5.1.4 Please follow the sequence below for repair, ensure repair is performed in a well ventilated area.

Step	Action
1	Visually inspect area to determine if the damage requires intervention, if so proceed to step 2.
2	If module is on ground, roll module until damaged area is on top. Ensure dunnage is used to protect pole from any further damage.
3	Clean affected area of any dirt or debris.
4	Spray damaged area with a high quality spray polyurethane such as *Krylon™ Clear Polyurethane Coating*. Krylon is only one example of high quality durable coatings available for sale; if this product is not available locally please use an equivalent product.
5	Let damaged area completely dry prior to moving module.

5.2. **Surface Damage**

5.2.1 Surface Damage is the next level of damage beyond superficial damage. If this is a new pole module, it is advised to not install the damaged module as repair and or replacement may be required.

5.2.2 This type of damage usually involves deep scratches or gouges in the pole modules. This damage may or may not involve the fiberglass rovings internal to the pole module laminate.

5.2.3 The cause of this type of damage is typically a result of product mishandling, usually in product shipment or during manipulation on site. It is vitally important to protect the pole with dunnage or other appropriate "cushions" during product shipment to the construction site and during the assembly and erection process. Please refer to RS document RStandard Installation Guide V2.2a (for your region) for complete installation instructions.

5.2.4 Please refer to Figure 3 and Figure 4 to assist in your damage evaluation.

Figure 3 - Surface Damage Gouge (intervention required)

Figure 4 - Surface Damage Gouge (intervention required)

5.2.5 The evaluation of this level of damage shall be performed by RS personnel, please use the following instructions:

Step	Action
1	Visually inspect the damage area to determine if this is surface damage, if so proceed to step 2.
2	If module is on ground, roll module until damaged area is on top. Ensure dunnage is used to protect pole from any further damage.
3	Clean affected area of any dirt or debris.
4	Make sure the damaged area is well illuminated and proceed to take a digital pictures using macro feature if available.
5	Forward image by email to the RS Account Executive in your region for further evaluation by RS Engineering and Field Services.
6	RS will provide further instructions about what type of intervention is required, which may involve a repair or replacement of the damaged module.

5.3. **Structural Damage**

5.3.1 Structural Damage is damage on the highest level which includes cracks through the entire pole module wall, laminate tears, punctures, and surface depressions, which can be caused by mishandling in shipment, vehicular impact etc.

5.3.2 **IN SERVICE POLES:** Damages of this level, will always involve intervention, and should be treated as critical if the pole is in service. Module and or pole removal and replacement should take place as soon as possible; for procedure on next activities refer to WI-7013 - Pole Removal from a Soil Foundation.

If structural failure is imminent, public safety has to be ensured using temporary structural supports and by closing off the site to public access.

5.3.3 **MODULES PRIOR TO INSTALLATION:** Modules with this type of damage shall not be installed. Those modules shall be replaced. Please contact RS to initiate module replacement. The cause of this type of damage is typically a result of product mishandling usually in product shipment or during manipulation on site. It is vitally important to protect the pole with dunnage or other appropriate “cushions” during product shipment to the construction site and during assembly in the erection process. Please refer to RStandard Assembly and Installation Guide V2.2a for complete installation instructions.

5.3.4 Please refer to Figure 5 and Figure 6 to assist in your damage evaluation.

Figure 5 - Structural Damage, forklift penetration

Figure 6 - Structural Damage, Mishandling

5.3.5 **IN SERVICE POLE - WITH DAMAGE TO BASE MODULE; REPLACMENT PROCEDURE:**

Please use the following procedure when replacing structurally damaged RS poles/modules.

Step	Action
1	Visually inspect the damaged area to determine if this is structural damage, if so proceed to step 2.
2	Determine whether this will be a complete pole replacement or only a module replacement.
3	For a complete pole replacement go to step 5.
4	For a pole module replacement go to step 6.
5	For pole extraction, follow procedures outlined in *WI 7013 - RS Pole Removal from a Soil Foundation.*

6	If the repair is going to involve a module change then provisions have to be made to support the remaining portion of the pole and conductors. This would normally involve the use of one or more boom trucks holding the top section of the pole while the module replacement is taking place.
7	To facilitate a module replacement, the pole will have to be separated at the overlap joint directly above the damage. RS has developed tooling specifically designed to separate pole modules once they have been assembled. Refer to WI-7014 - Horizontal Pole Disassembly using Boom Truck, Pole disassembly Kit
8	Refer to WI-7014 Horizontal Pole Disassembly using Boom Truck, section 5.3 inclusive but being performed in a vertical situation.
9	Upon successful separation of the damaged module from the top section, please follow procedures outlined in *WI 7013 - RS Pole Removal from a Soil Foundation* from Section 5.2 up to and including Section 5.3.
10	Assemble new pole base module to base plate. Ensure pole hole excavation is sized to the proper specification for the pole being erected.
11	Lower the base section into the excavation; ensure that the base section is positioned so the alignment markers in the new base module and the suspended upper modules are in line.
12	Lower the top sections of the pole onto the new base section prior to tamping the base foundation. Keeping the base section loose will aid in aligning the top and bottom sections.
13	After the base and upper sections are together re-verify that the alignment markers are in line before filling in the excavation and tamping to ensure a good foundation as described in *WI 7103 – RS Pole Removal from a Soil Foundation,* Section 5.4.
14	Mate the top sections to the new base module, using tools and instructions contained in RStandard Assembly & Installation Guide V2.2a (for your region).

5.3.6 **IN SERVICE POLE - WITH DAMAGE TO OTHER THAN BASE MODULE; REPLACMENT PROCEDURE:**

Please use the following procedure when replacing structurally damaged RS poles modules.

Step	Action
1	Visually inspect the damaged area to determine if this is structural damage, if so proceed to step 2.
2	Determine whether this will be a complete pole replacement or only a module replacement.
3	For a complete pole replacement go to step 5.
4	For a pole module replacement go to step 6.
5	Please follow procedures outlined in *WI 7103 - RS Pole Removal from a Soil Foundation.*
6	If the repair is going to involve a module replacement then provisions have to be made to support the remaining portion of the pole and conductors. This would normally involve the use of one or more boom trucks holding the top section of the pole while the module replacement is taking place.
7	To facilitate a module change out, the pole will have to be separated at the overlap joint directly above the damage. RS has developed tooling specifically designed to separate pole modules once they have been assembled; Refer to WI-7014 - Horizontal Pole Disassembly using Boom Truck, Pole disassembly Kit
8	Refer to WI-7014 - Horizontal Pole Disassembly using Boom Truck, section 5.3 inclusive but being performed in a vertical situation.
9	Upon successful separation of top sections from the lower damaged section, lower the module separating tool to the overlap joint directly below the damaged section.
10	Repeat step 8, but now to separate the actual damaged module from the good lower modules using the module separating tool. Ensure the damaged module is supported as it is being separated from the lower sections. Once the separation is completed lower the damaged module to the ground.
11	Lift the new pole module into place ensuring the alignment markers are all in line, and lower onto the bottom sections of the pole.
12	Lower the top sections of the pole onto the new module, keeping the alignment marks aligned. Slight movements in supporting booms might be required to achieve module mating.
13	Mate the new module to the module(s) directly below and above using tools and instructions contained in RStandard Assembly & Installation Guide V2.2a. (for your region).
14	Verify the condition of the foundation after the repair is completed; re-tamp the foundation if pole movement has been identified.

Section 6 - REFERENCES

6.1.	RSAIG V2.2a	RStandard Assembly & Installation Guide
6.2.	WI 7013	RS Pole Removal from a Soil Foundation
6.3.	WI 7014	Horizontal Pole Disassembly using Boom Truck

Section 7 - ATTACHMENTS

N/A

Originated By: _____ //_____
RS Field Services Date

William J. Bateman
Name/Title (Printed)

Approved By: _____ //_____
Engineering Date

Fred Volk / Mgr, Engineering
Name/Title (Printed)

Approved By: _____ //_____
Quality Assurance Date

_____
Name /Title (Printed)