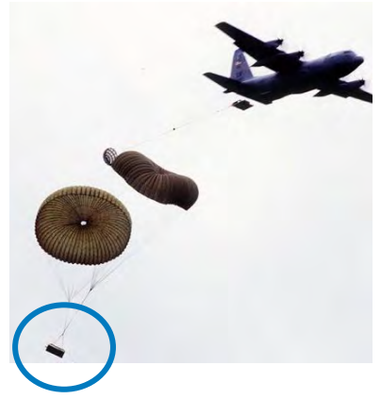
Assembly Procedures For 42 by 42 Layout CDS



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Website for more in formation:

1) https://www.qrdc.com/library/real-reusable-energy-absorbing-layer/

2) https://www.qrdc.com/

August 11, 2025

READ Me First

Conditional Warranty for REAL & RUSB

1) **QRDC provides a conditional warranty for a minimum of 35 airdrops. If REAL or RUSB experience failure related to aerial delivery with fewer than 35 airdrops, QRDC will replace any damaged parts at no cost. Customer is responsible for shipping costs.**

2) **Customers shall pay shipping costs for warranty replacement parts.**

3) **Conditional Warranty is void if recommended assembly, loading, or DZ recovery procedures are not followed.**

4) **Conditional warranty may be void if a customer does not follow the specified (i.e., what not-to-do list) guidelines during assembly, loading, or recovery from DZ (Drop Zone).**

Overview

1) General Assembly of REAL Modules

2) Tiedowns of REAL Modules

3) Mass Airdrop

4) Recovery Procedures

5) Open Discussion and Q/A

42 by 42 CDS Layout

Assembly Procedure

Weight of Product Packages
CDS & LCLA Standard Load Capacity

Table 1 – CDS Layout (42 by 42")

Layout (3" height)	Package ID	Parts Included in the Package					
		Part ID					
		REAL			Belt42	RUSB03 Black	Weight [lb]
		06M12	23M126	04M06			
42 by 42	CDS4242S100BSbBe	9	6	1	1	1	137

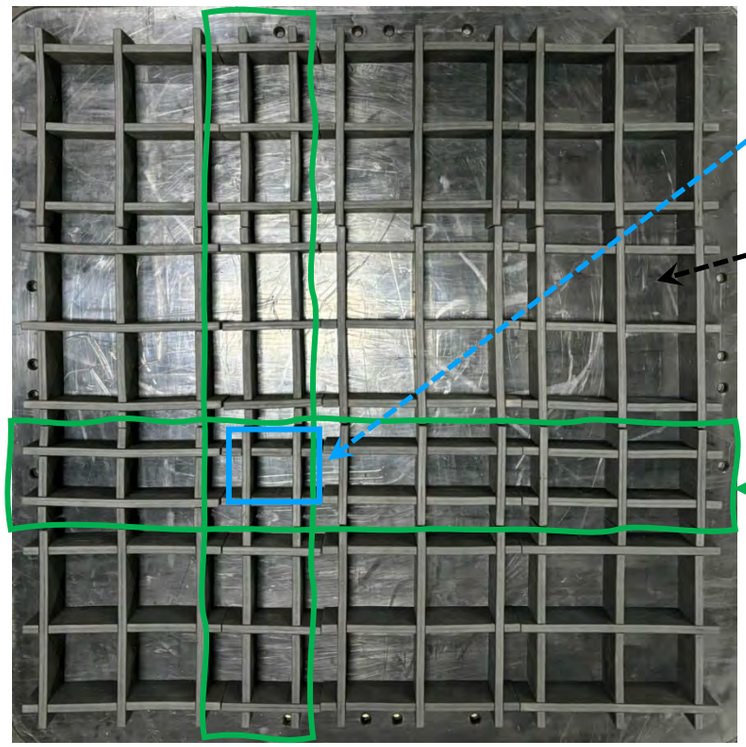
S: Standard Load Capacity

B: with Belt

Figure 2 - CDS Layout: 42x42x3”

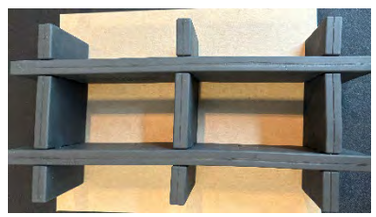
9 REAL06M12, 6 REAL23M126,
& 1 REAL04M06

Standard Load
Capacity: 2,400 lbs
Weight (no belt): 126 lbs



6x6x3” module
REAL04M6

12x12x3” module
REAL06M12



6x12x3” module
REAL23M126

Assembly Procedures for 42 by 42 CDS Layout using REAL and RUSB

REAL (Reusable Energy Absorbing Layer) assembly instructions for one CDS bundle.
It is assumed the REAL layout is 42”X42” at the center of the skid.
The entire assembly should take 12 to 15 minutes.

There are two options to assemble 42 by 42” layout.

For your package: Use Nine REAL06M12, Six REAL23M126, and One REAL04M6

Step - 1:

This is an optional step if the rigger likes to have a centered and balanced load.
Lay out the 48”x48” skid board without any REAL modules.

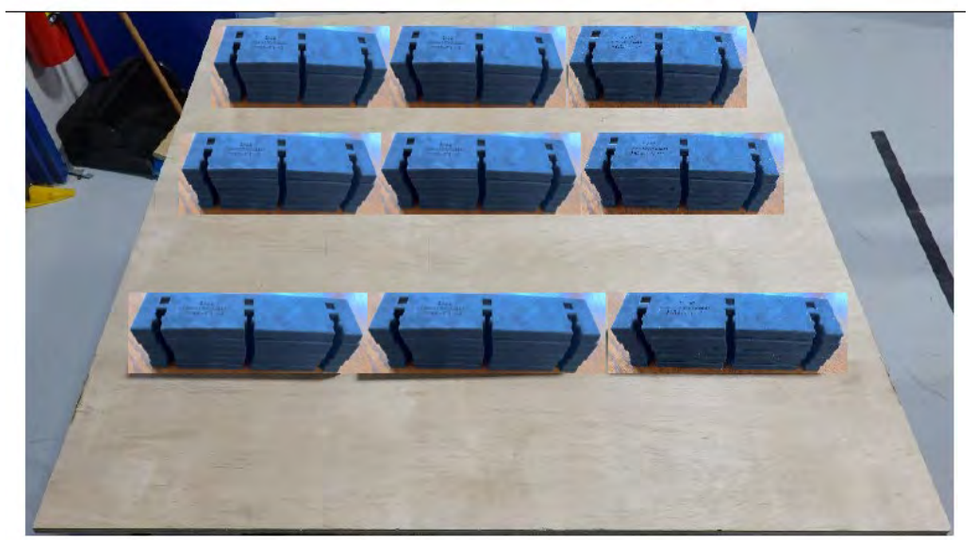
Measure and mark center point on skid board. Use this mark for your center module. This center mark will be useful when rebuilding the load.

Step - 2:

Unpack the REAL package and lay on the skid board.

Full image showing REAL package, for 1 CDS bundle, resting on skid board.

The lower image shows a closeup view of REAL package resting on skid board.



Step - 3:

Split the package into stacks of 6 REAL parts (representing each REAL module (12” by 12” by 3”). Lay out REAL modules on skid board.
The actual color is black, or a color requested by customer.

Step - 4:

Start assembly of one REAL06M12 module.

The actual color is black, or a color requested by customer.

Step - 5:

Start with two REAL parts and attach as shown in this image. It would be helpful to use a hand/fist (or a hammer with elastic head) to pound the REAL into place. You want it to fit snuggly and be flat on the top and bottom.

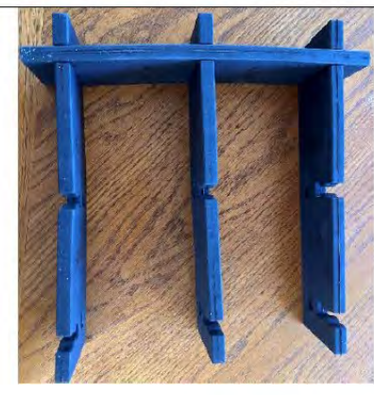
Step - 6:

Repeat Step - 5 for an additional 2 REAL parts.
Now three REAL parts are bridged with one part. Two views are shown.

Step - 7:

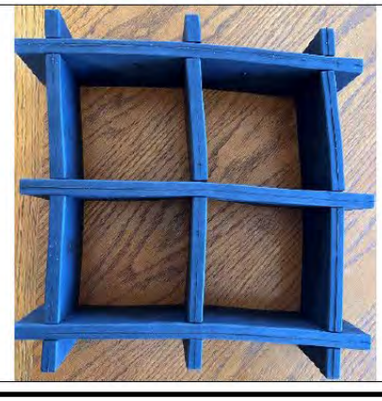
Flip over the assembly shown in Step - 6.

Two views are shown.



Step - 8:

Connect the remaining 2 REAL parts as shown in the figure. Now one REAL06M12 module is assembled. This module has six (6) 12” leaves.



Assembling REAL06M12

(Video is not available in PDF format)

To View the assembly video, use the below link on YouTube

https://www.youtube.com/playlist?list=PL-DXOhMVuaWY9YC3g2SbLwu56qvHx-pJD

Step - 9:

<u>Assemble REAL04M6 Modules</u>
Start assembly of one 6” REAL module.
The actual color is black, or a color requested by customer.

Step - 10:

Start with two 6” REAL parts and attach as shown in this image. It would be helpful to use a hand/fist (or a hammer with elastic head) to pound the REAL into place. You want it to fit snuggly and be flat on the top and bottom.

Step - 11:

Repeat Step - 5 for an additional 6” REAL parts.
Now two REAL parts are bridged with one part. Two views are shown.

Step - 12:

Flip over the assembly shown in Step - 11.

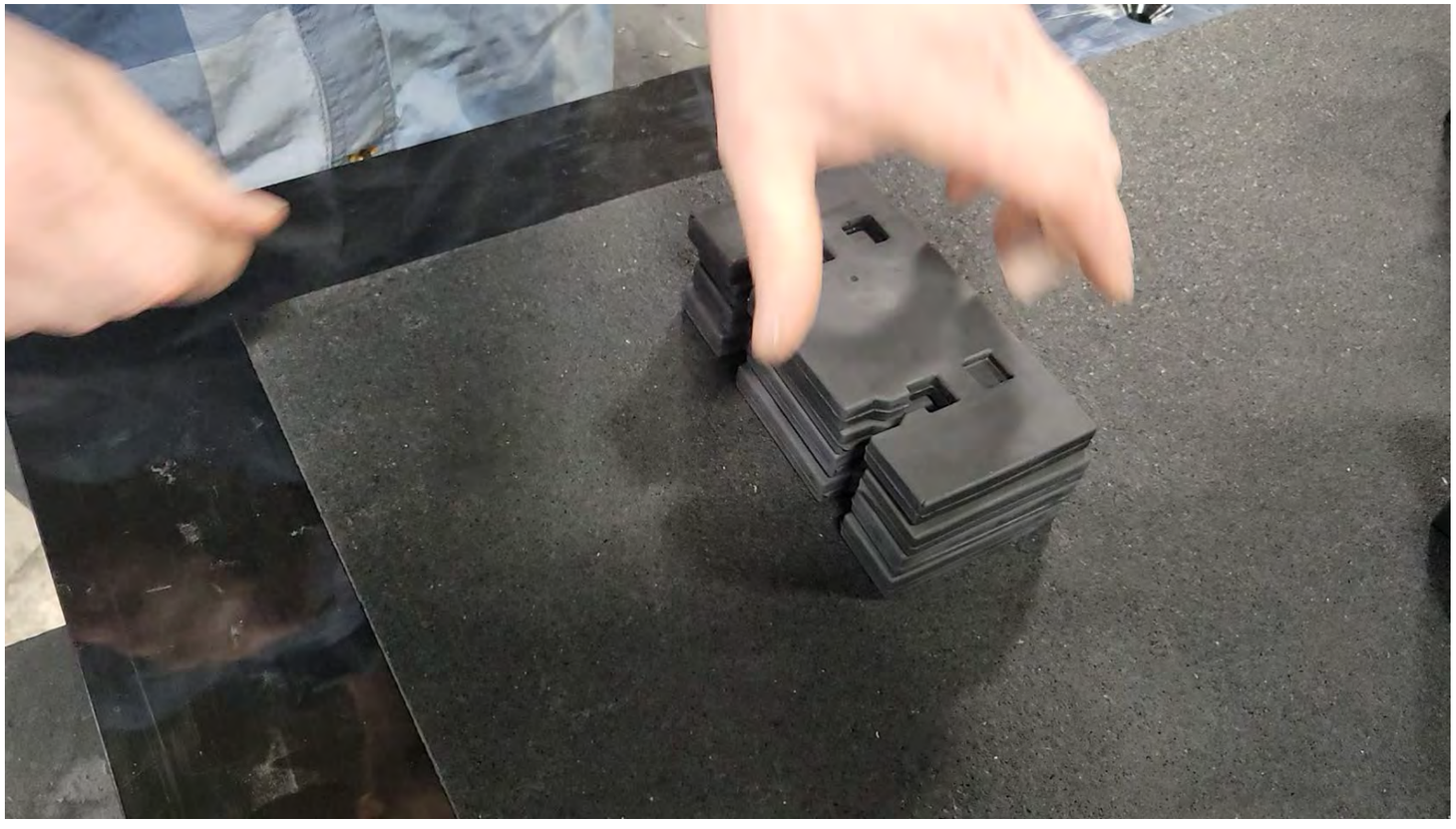
Step - 13:

Connect the remaining REAL parts as shown in the figure. Now one 6” REAL (REAL04M6) module is assembled. This module has four (4) 6” leaves.

Assembling REAL04M06

To View the assembly video, use the below link on YouTube

https://www.youtube.com/playlist?list=PL-DXOhMVuaWY9YC3g2SbLwu56qvHx-pJD



(Video is not available in PDF format)

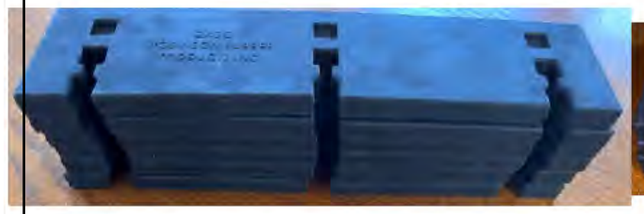
Step - 14:

<u>Assemble REAL23M126 Modules</u>

You need two 12” and three 6” REAL

Start assembly of one REAL23M126 module.

The actual color is black, or a color requested by customer.



Step - 15:

Start with two one 12” REAL parts and one 6” REAL attach as shown in these images. It would be helpful to use a hand/fist (or a hammer with elastic head) to pound the REAL into place. You want it to fit snuggly and be flat on the top and bottom.

Step - 16:

Repeat Step - 15 for an additional 12 and the same 6” REAL parts.
Now two 12” REAL parts are bridged with one 6” REAL part. .

Step - 17:

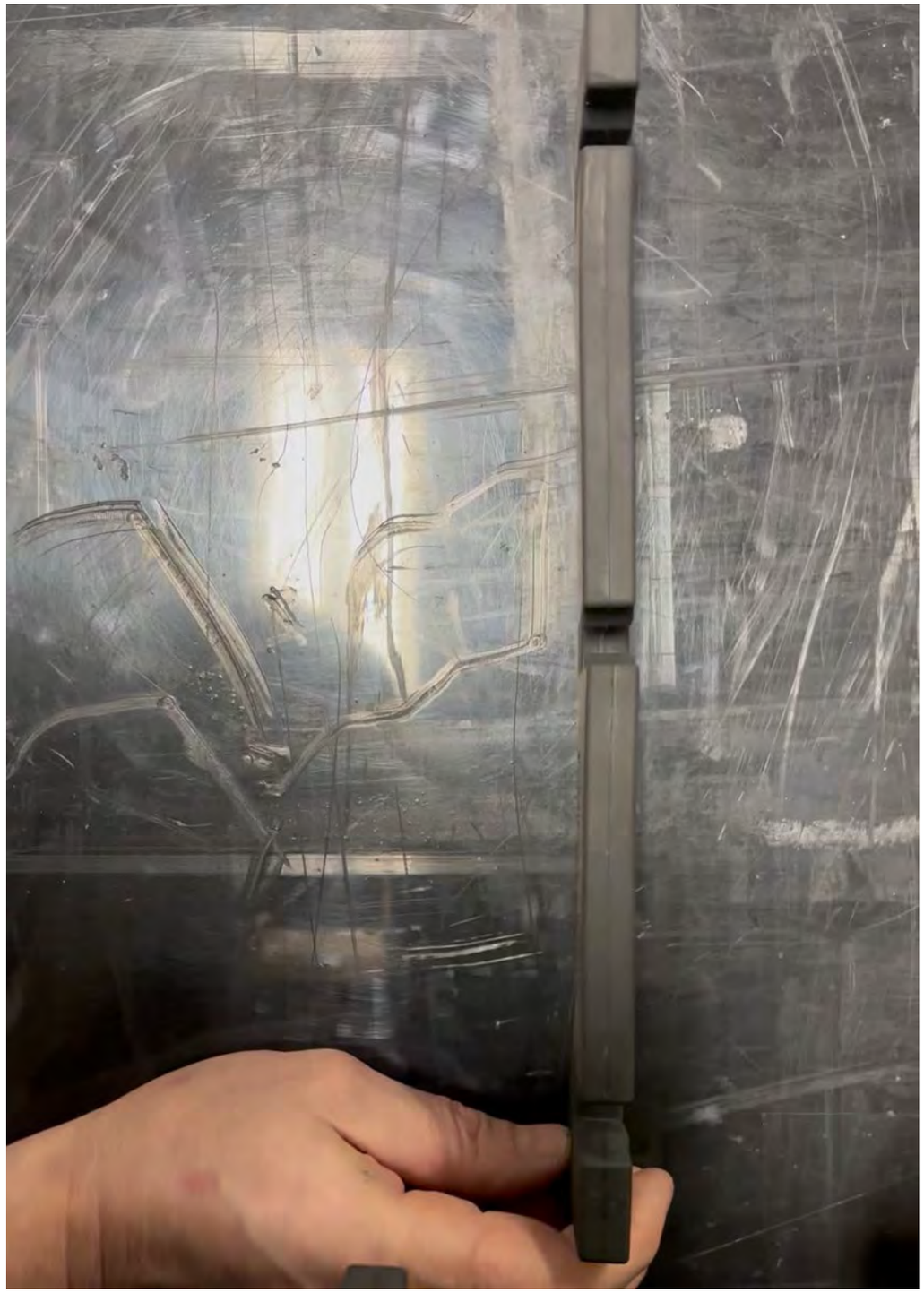
Repeat Step - 16 for the same 12” REAL parts and an additional 6” REAL parts.

Step - 18:

Connect the 3rd 6” REAL parts as shown in the figure. Now one REAL23M126 module is assembled. This module has two (2) 12” and three (3) 6” leaves.

Assembling REAL23M126

(Video is not available in PDF format)



To View the assembly video, use the below link on YouTube

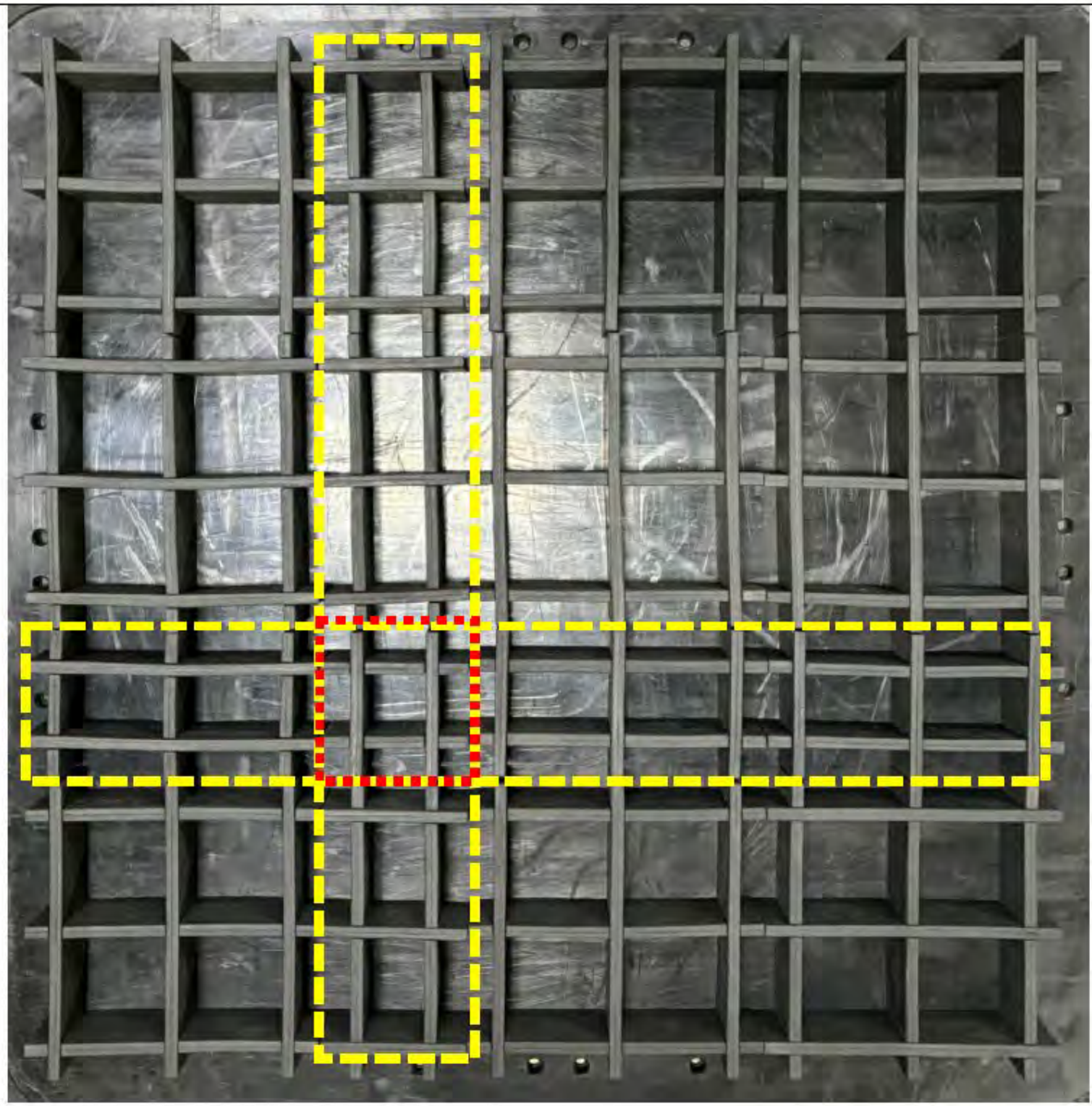
https://www.youtube.com/playlist?list=PL-DXOhMVuaWY9YC3g2SbLwu56qvHx-pJD

Step-19: 42” by 42” layout.

Repeat steps-4 through -18 to assemble nine **REAL06M12,** six **REAL23M126, and** one **REAL04M6** modules and lay out all REAL modules on skid board as shown in this figure. You will have nine **REAL06M12,** six **REAL23M126 and** one **REAL04M6** modules for 1 CDS bundle. They should be evenly spaced from the edges/

Load Capacity: 2300 lbs

Yellow box shows the layout of REAL23M126
Red box in the middle shows REAL04M6



Assembly Procedures for 42 by 42 CDS Layout using REAL and RUSB

Step-20:

1) Wrap the belt around the layout.
2) Tension the belt and overlap the extra sections.

The first image shows tensioning the belt.

Works for 36X36", 36X42", 42X42", & 24X42" Layouts.

This image shows the belt and buckle.

The second image (right side) shows the part of the belt sections overlapped.

The third image shows the belt around the entire assembled layout.

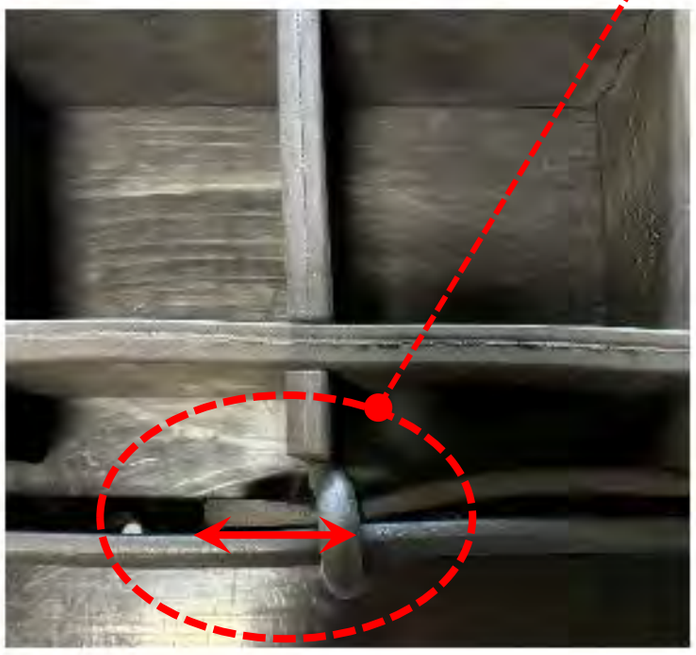
As an example, this image shows 42X42" layout.

The belt is long enough to work with 36X36", 36X42", 42X42", & 24X42" Layouts.

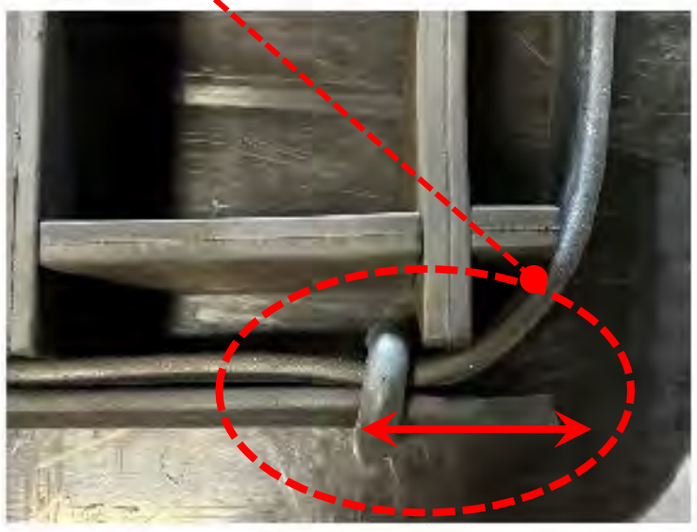
It is recommended that you do not tighten the belt until load is placed on REAL layout (see the next page)

Placed the belt around the assembly and tightened enough to barely touch the edges of REAL. Place the buckles in the right locations ready for overlap.

The slack part of belt should not exceed 3 or 4”



3 or 4”



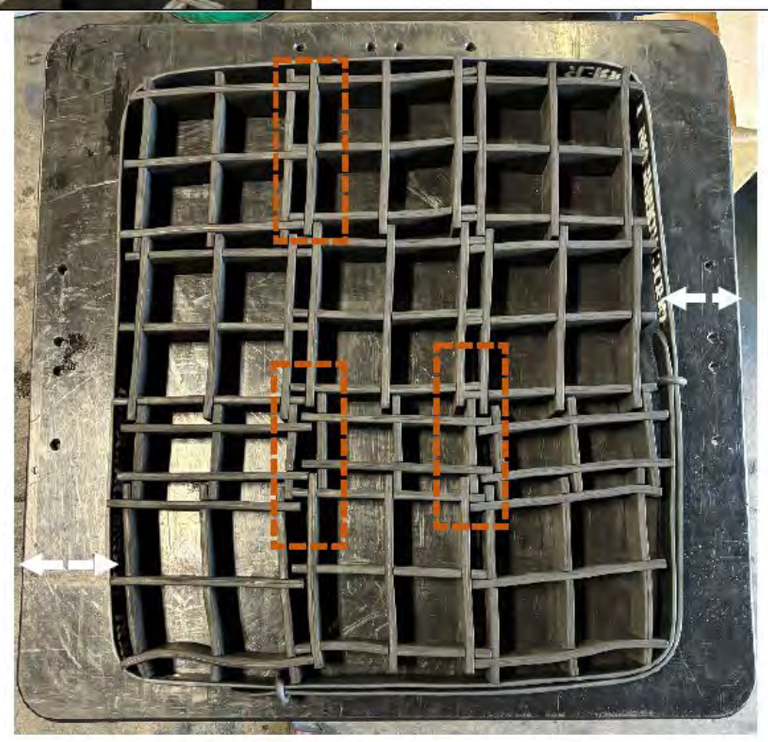
3 or 4”

Step-20a (compact):

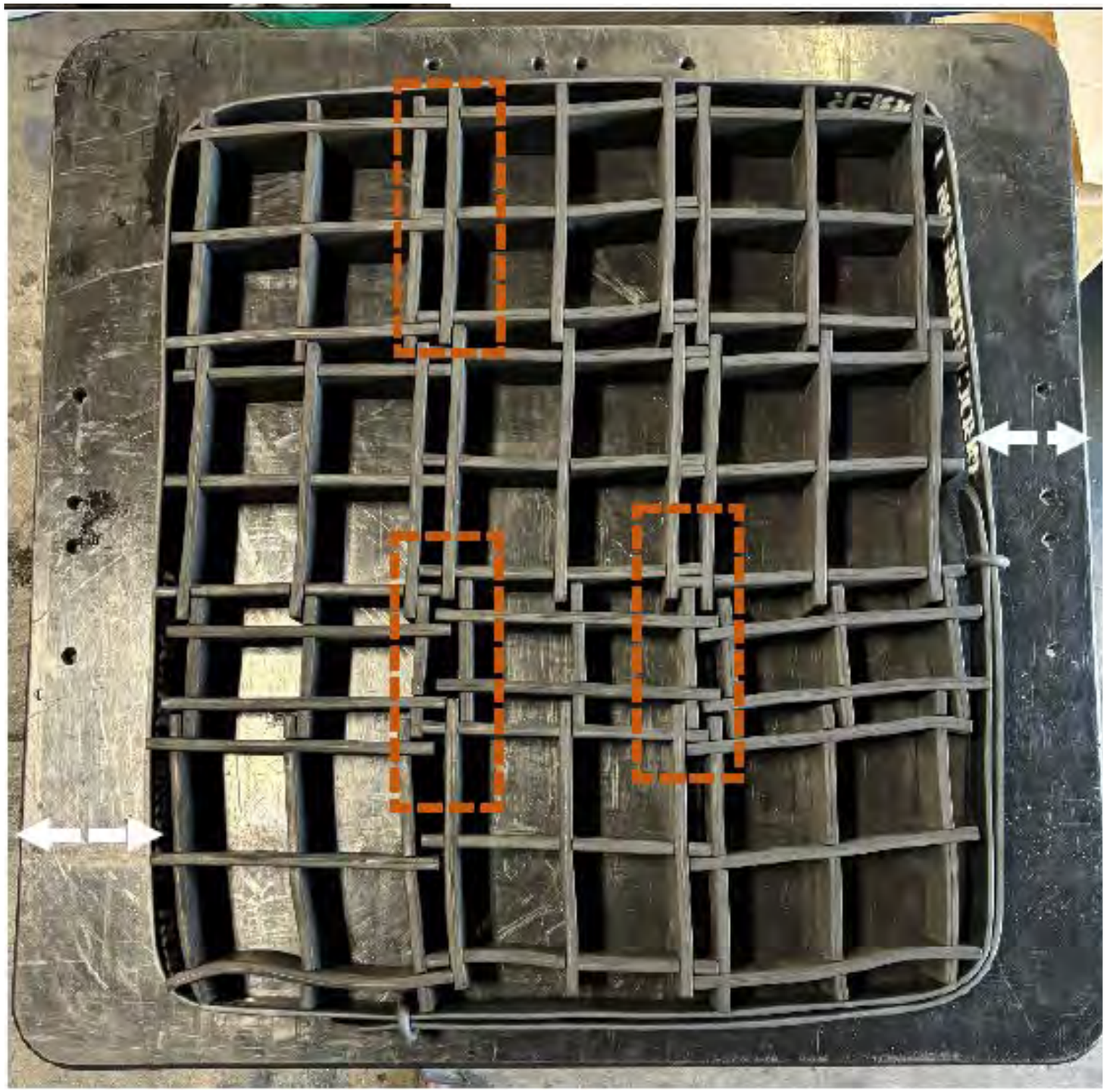
1) As an option, to prevent any movement, one can interlock REAL modules as shown in the picture.

2) The images shown in orange boxes show sample areas where REAL modules are compacted (i.e., overlapped and interlocked).

3) This makes the layout smaller (by 3 inches) in all 4 sides, but it makes the layout much more stable once it hits the ground in an odd orientation, such as corners.



Zoomed image of interlocking REAL modules, shown in red boxes.



Step by Step Tiedowns

42X42” Layout using

Each RUSB needs

One M06 module +

Six M126 modules +

Nine M12 modules

Step 1:
Complete REAL layout on RUSB plus belt

Legend:

Light Blue: Belt

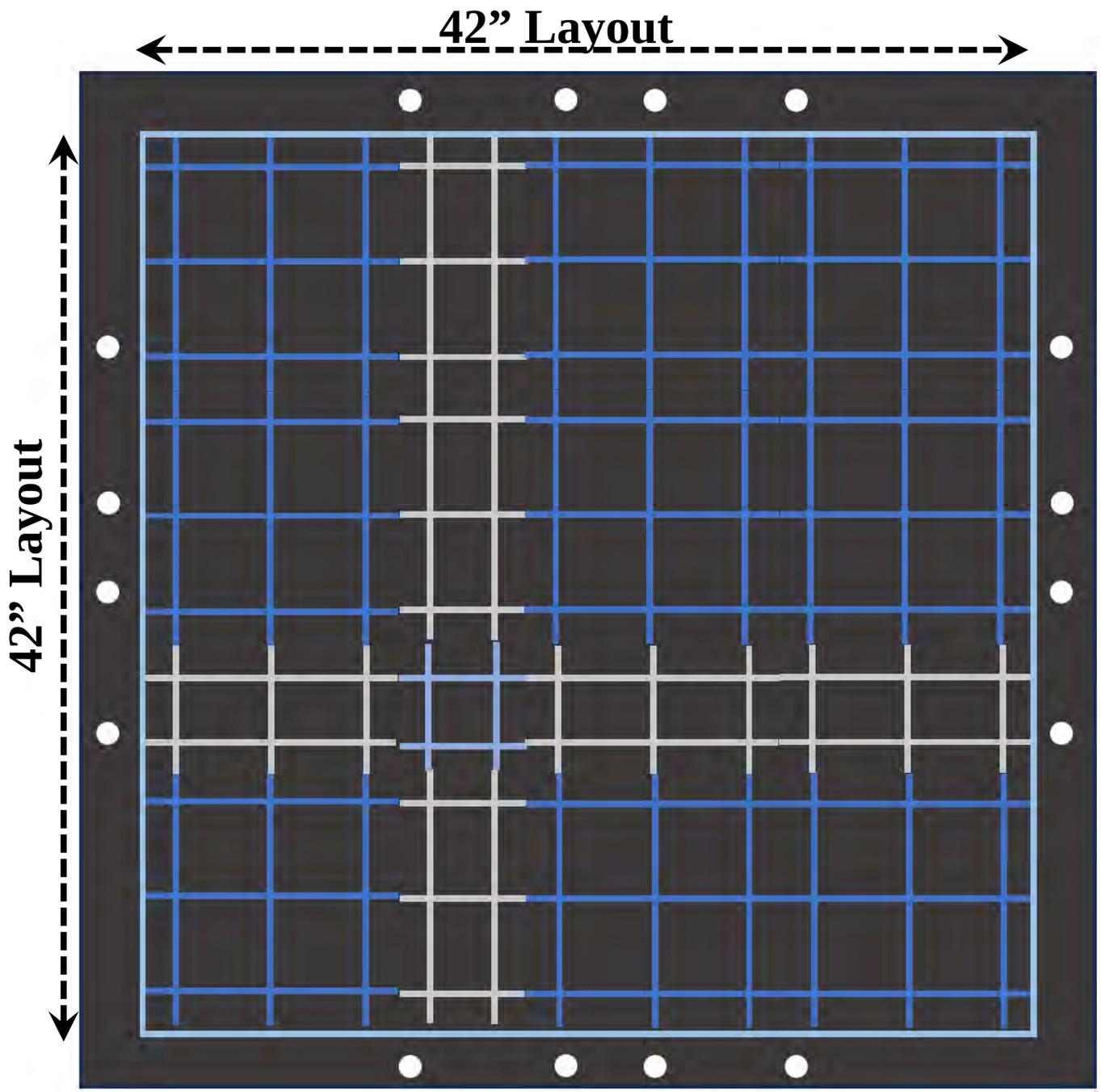
Dark Blue: REAL06M12

White: REAL23M126

Light Blue: REAL04M06

Black: RUSB

White Circles ○: Holes on RUSB



Step 1:

Complete REAL layout on RUSB plus belt

Actual image
42X42 CDS Layout

Use 2G Ties

Step 2 (Video):

(Video is not available in PDF format)

To View the tiedown video, click on this link on YouTube
https://www.youtube.com/playlist?list=PL-DXOhMVuaWY9YC3g2SbLwu56qvHx-pJD

Use a 2G rope (~96”) to interconnect one row of REAL from belt to belt.

You need eleven (11), each 96”, 2G ropes to complete the rows and columns in this layout.

Seven (7) 96” 2G ropes for rows.
Four (4) 96” 2G ropes for columns.

Use 2G Ties

Step 2 (actual image):

Use a 2G rope (~96”) to interconnect one row of REAL from belt to belt.

An image after first tiedown row is completed.

Use 2G Ties

(Video is not available in PDF format)

Step 3 (Video):

Repeat Step 2 for every row using 2G ropes (each ~96”) to interconnect rows of REAL from belt to belt.

To View the tiedown video, click on this link on YouTube

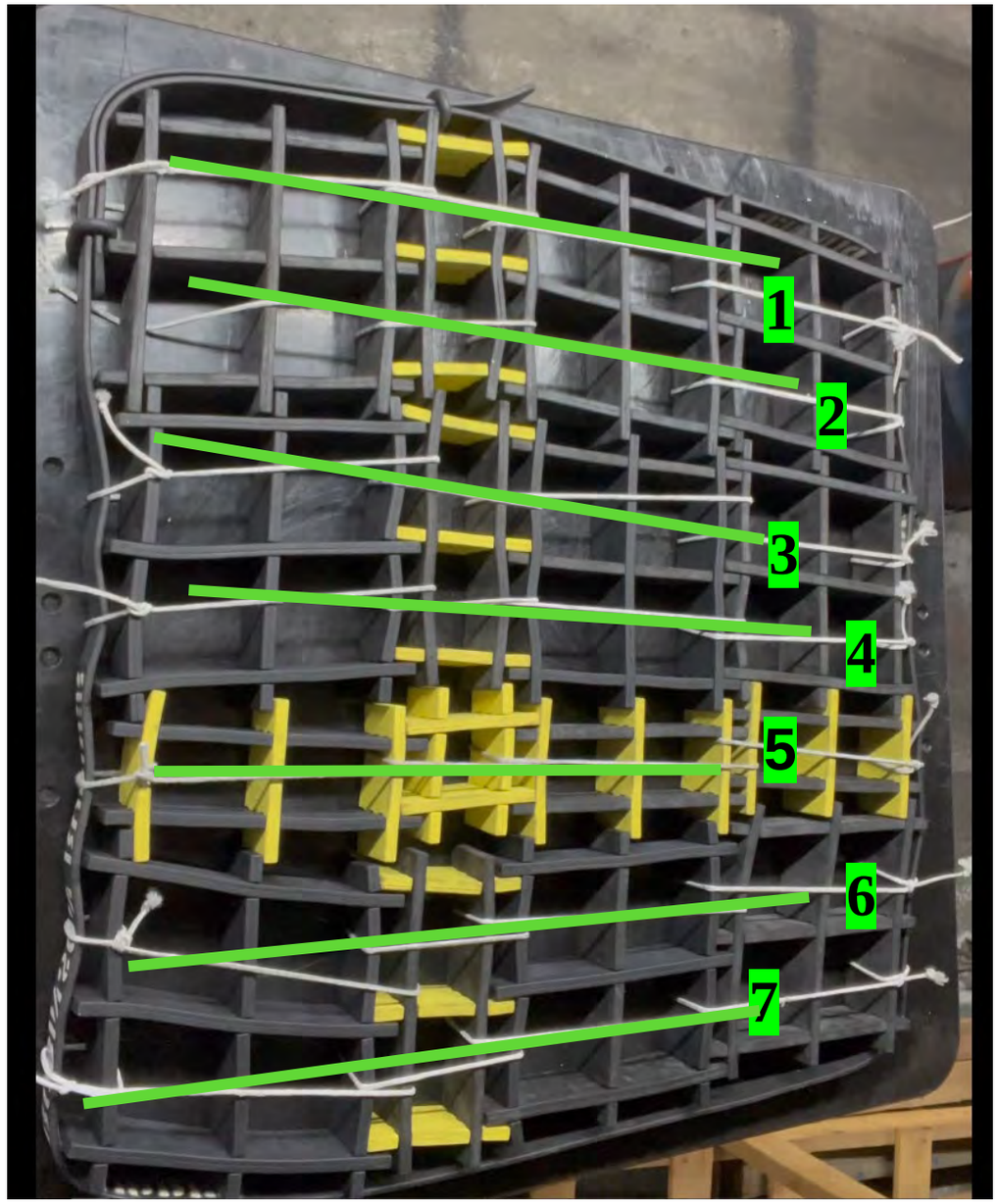
https://www.youtube.com/playlist?list=PL-DXOhMVuaWY9YC3g2SbLwu56qvHx-pJD

Use 2G Ties

Step 3 (Image):

Repeat Step 2 for every row using 2G ropes (each ~96”) to interconnect rows of REAL from belt to belt.

An image after all 7 tiedown rows are completed.



Use 2G Ties

(Video is not available in PDF format)

Step 4 (Video):
Use a 2G rope (~96”) to interconnect the first column of REAL from belt to belt.

You need four (4) 96” 2G ropes for columns.

To View the tiedown video, click on this link on YouTube
https://www.youtube.com/playlist?list=PL-DXOhMVuaWY9YC3g2SbLwu56qvHx-pJD

Use 2G Ties

Step 4 (Image):
Use a 2G rope (~96”) to interconnect one column of REAL from belt to belt.

An image after first tiedown column is completed.

Use 2G Ties

Step 5 (Video):
Repeat Step 4 for every other column using 2G ropes (~96”) to connect columns of REAL from belt to belt.

(Video is not available in PDF format)

To View the tiedown video, click on this link on YouTube
https://www.youtube.com/playlist?list=PL-DXOhMVuaWY9YC3g2SbLwu56qvHx-pJD

Use 2G Ties

Step 5 (Image):
Repeat Step 4 for every other column using 2G ropes (~96”) to interconnect columns of REAL from belt to belt.

An image after every other columns are tied down.

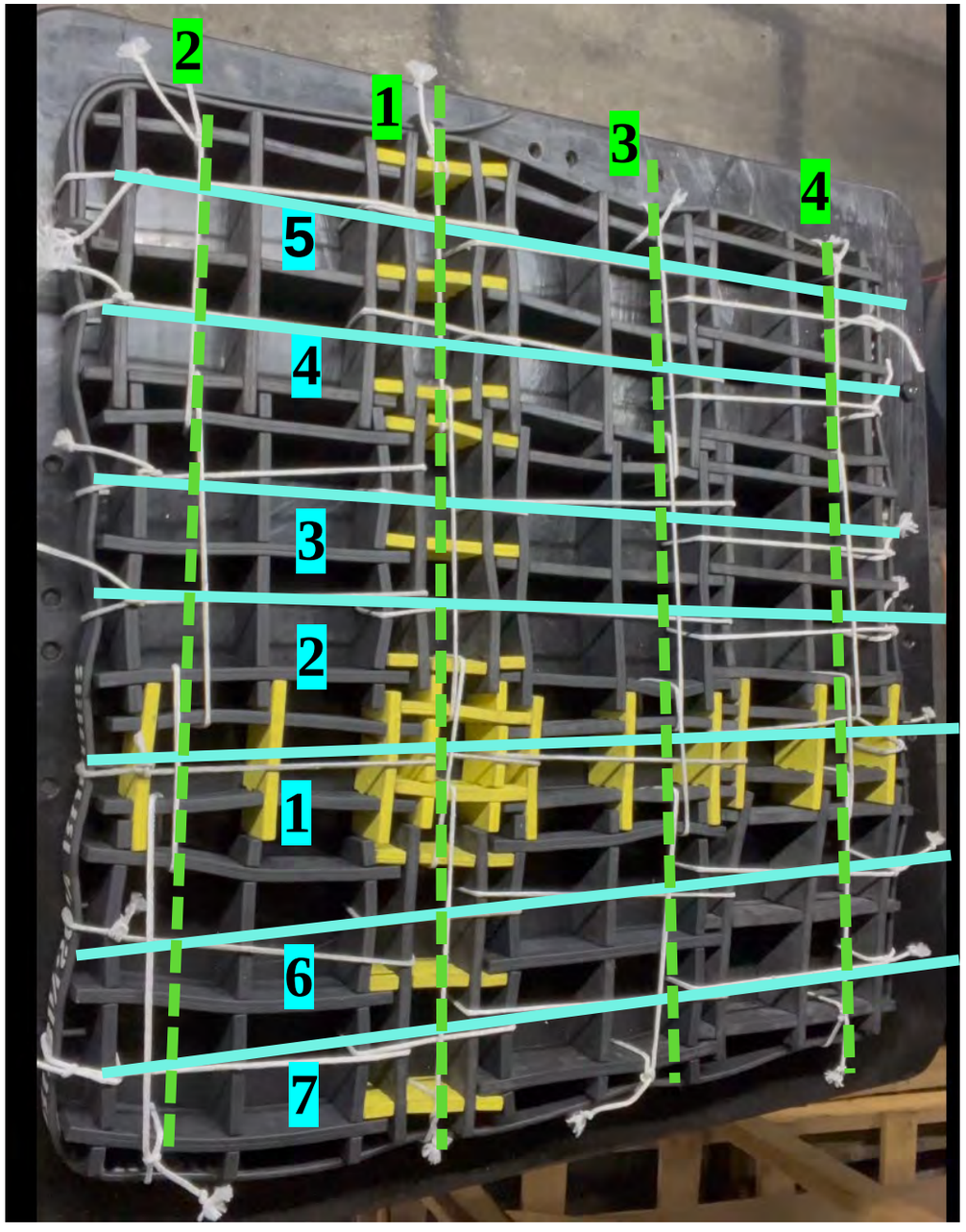
All together, 4 columns and 7 rows are tied down.

Step 6 – Final Step (Image): Order

The image shows the top view of of the REAL layout after all tiedowns are completed.
You should have:

1) **7 tiedown rows connecting REAL modules from belt to belt.**

2) **4 tiedown columns connecting REAL modules from belt to belt.**

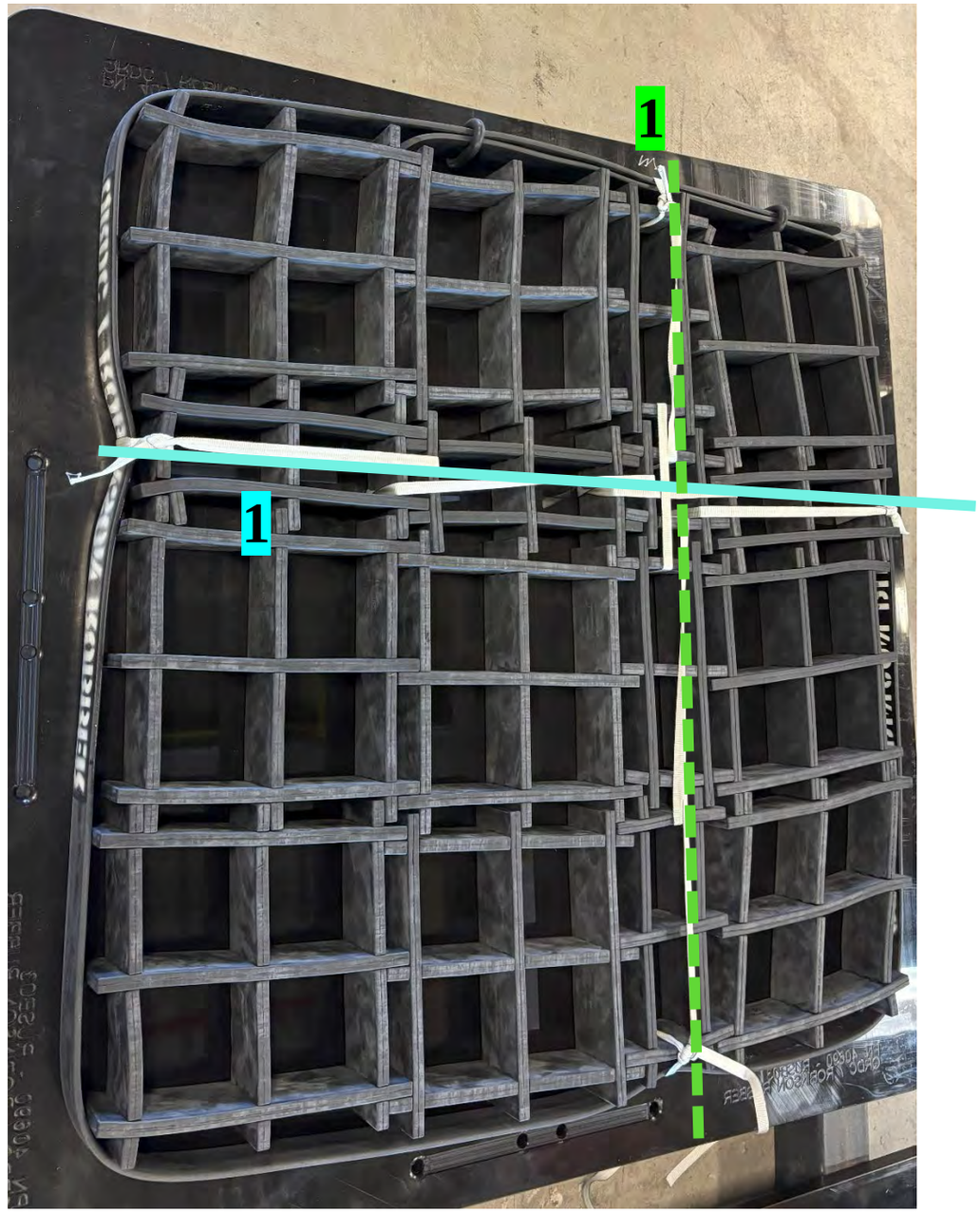


Order of Tiedowns (Image):

The image shows the top view of of the REAL layout after all tiedowns are completed.
You should have:

1) **1 tiedown connecting REAL modules from belt to belt over 6” module.**

2) **1 tiedown connecting REAL modules from belt to belt over 6” module.**



Order of Tiedowns (Video):

1 tiedown connecting REAL modules from belt to belt over the 6” module column and row.

(Video is not available in PDF format)

To View the tiedown video, click on this link on YouTube

https://www.youtube.com/playlist?list=PL-DXOhMVuaWY9YC3g2SbLwu56qvHx-pJD

Step-21:

1) After the REAL assembly is completed and the belt is placed around the assembly, apply load.
2) The load should be centered.
3) In this case, the load is a yellow steel cage (weighing 900 lbs). Load can be 4 barrels filled with water, weighing 600 to 800 lbs.
4) After load is applied, tighten the belt to the desired tension. Check to see if any of the REAL modules are buckled. If so, tension is too much.

Tip:

5) **Moving rubber (buckle) over rubber (belt) can be hard due to sticky friction. To move the buckle easier so the belt can be tightened, one can spray small amounts of silicone, graphite, or liquid soap under the buckles. Spraying water will help.**

Step-22:

1) Secure the load to RUSB using the standard method (4 qualified strings om each of the 4 sides).
2) Place a parachute on the top of the load.
3) After CDS bundle is inspected and approved, it is ready to be loaded in the airplane and be made ready for aerial delivery.

Things not to do during assembly

Noooo!

Not Recommended!

Recommended!

Mass Airdrop

Intermixing RUSB and Plywood in Mass Airdrop

1) It is noted that CDS or LCLA bundles using RUSB exit aircraft faster than plywood bundles.
2) If RUSB and Plywood bundles are used in mixed mass airdrop, it is strongly recommended, RUSB bundles exit first (placed closest to the exit door).
3) When intermixing RUSB and plywood bundles in mass airdrop, lead RUSB bundle as after most bundle.

AFSOC FCIF 25-112

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FLIGHT CREW INFORMATION FILE

AFSOC #	UNIT #	RELEASE DATE	UNIT POST DATE
A3V-25-112		14-Aug-25	

RESCIND DATE — UNTIL FURTHER NOTICE ☒

SUBJECT: Reusable Universal Skid Board Use on Unilateral CDS Training Loads

MDS	INDEX #	WING/GROUP	SQUADRON	SQUADRON	OTHER CMDS
MC-130J		1 SOW	1 SOS		ACC
		27 SOW	6 SOS		NGB
		193 SOG(G)	8 SOS		AFMC
		352 SOW	9 SOS		AETC
		353 SOW	14 WPS		
		492 SOW	15 SOS		
			18 SOTES		
			19 SOS		
			67 SOS		
			193 SOS(G)		

CREW POSITION

ALL ☒	P ☐	NAV ☐	EWO ☐	CSO ☐	FCO ☐	FE ☐	LM ☐	AG ☐	SO ☐	DSO ☐
TSO ☐	MCS ☐	AMSO ☐	MSO ☐	FSO ☐	SUAS ☐	SMA ☐	WSO ☐	SW ☐	☐	☐

AFSOC FORM 12, 20191003
Prescribed by: AFI11-202v2_AFSOCSUP

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Page 1 of 2

AFSOC FCIF 25-112

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AMPLIFYING INFORMATION:

1. This AFSOC FCIF applies to units operating the MC-130J; all others take for information only.

2. The Reusable Universal Skid Board (RUSB) is a composite, reusable Container Delivery System (CDS) skid board with the potential to significantly reduce the cost of conventional plywood skid boards. Additionally, RUSB is designed to be utilized with Reusable Honeycomb (REAL/REAP), but can be used with traditional Energy Dissipating Material (EDM) honeycomb.

3. RUSB is approved for use for unilateral training airdrops; however, a full restraint evaluation of the RUSB is pending and has not been completed. Until a full restraint evaluation is completed, vertical restraint will be applied utilizing aircraft CGU 1/B straps to all CDS bundles rigged with the RUSB. This includes bundles restrained by the Center Vertical Restraint (CVR). Straps used as additional restraint will be placed and secured in a manner that does not interfere with the parachute and/or bundle rigging.

4. User reports indicate the RUSB exits faster than a plywood skid board. To prevent malfunctions caused by bundle interaction among mixed RUSB and plywood skid boards, all bundles rigged with RUSB in a mass configuration will be loaded to exit the aircraft before any bundles rigged with plywood boards exit. If a bundle rigged with RUSB is the first to exit the aircraft--and until RUSB exit times have been fully evaluated and published--aircrews will subtract one second from the calculated CDS exit time to correct for faster exit. This corrected exit time will be overwritten into the aircraft's CARP computer or manually computed CARP.

5. Aircrews will report any problems encountered when using the RUSB to AFSOC/A3FW/A3V.

6. The FCIF will remain in effect until the TO 13C7-1-11 is revised/published and additional guidance is incorporated.

7. Post this FCIF within 2 days of receipt to Volume 1, Part B of the FCIF. AFSOC/A3V is the POC, DSN 579-4880.

AFSOC FCIF 25-112

UNCLASSIFIED

(When Filled In)

Zoomed on the most important paragraph of this AFSOC FCIF 25-112

4. User reports indicate the RUSB exits faster than a plywood skid board. To prevent malfunctions caused by bundle interaction among mixed RUSB and plywood skid boards, all bundles rigged with RUSB in a mass configuration will be loaded to exit the aircraft before any bundles rigged with plywood boards exit. If a bundle rigged with RUSB is the first to exit the aircraft--and until RUSB exit times have been fully evaluated and published--aircrews will subtract one second from the calculated CDS exit time to correct for faster exit. This corrected exit time will be overwritten into the aircraft's CARP computer or manually computed CARP.

Recovery Procedures

1) **REAL and RUSB are reusable aerial delivery products.**

2) **To last more than 35 to 100 airdrops, recovery procedures should be done with care. Handling should be different than a century-old 1-time use cardboard honeycomb.**

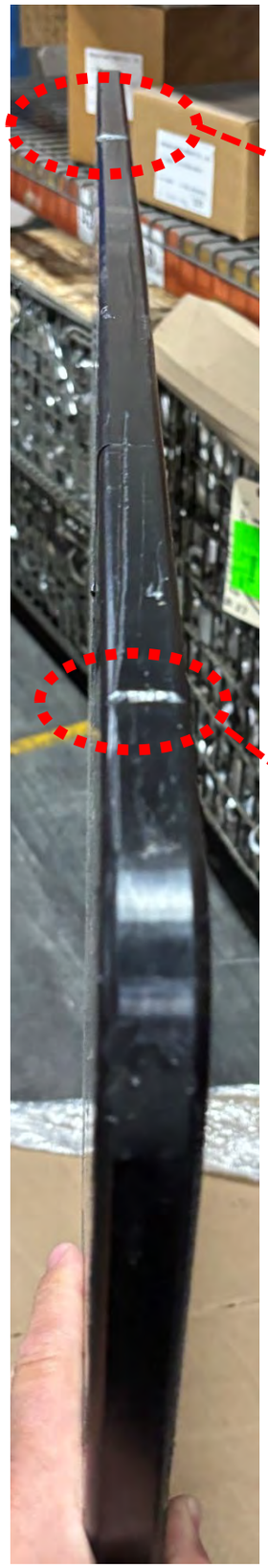
3) **After each drop, please make visual inspection for any popover or blowouts. If you see any, take pictures and send to QRDC. Your feedback is very important.**

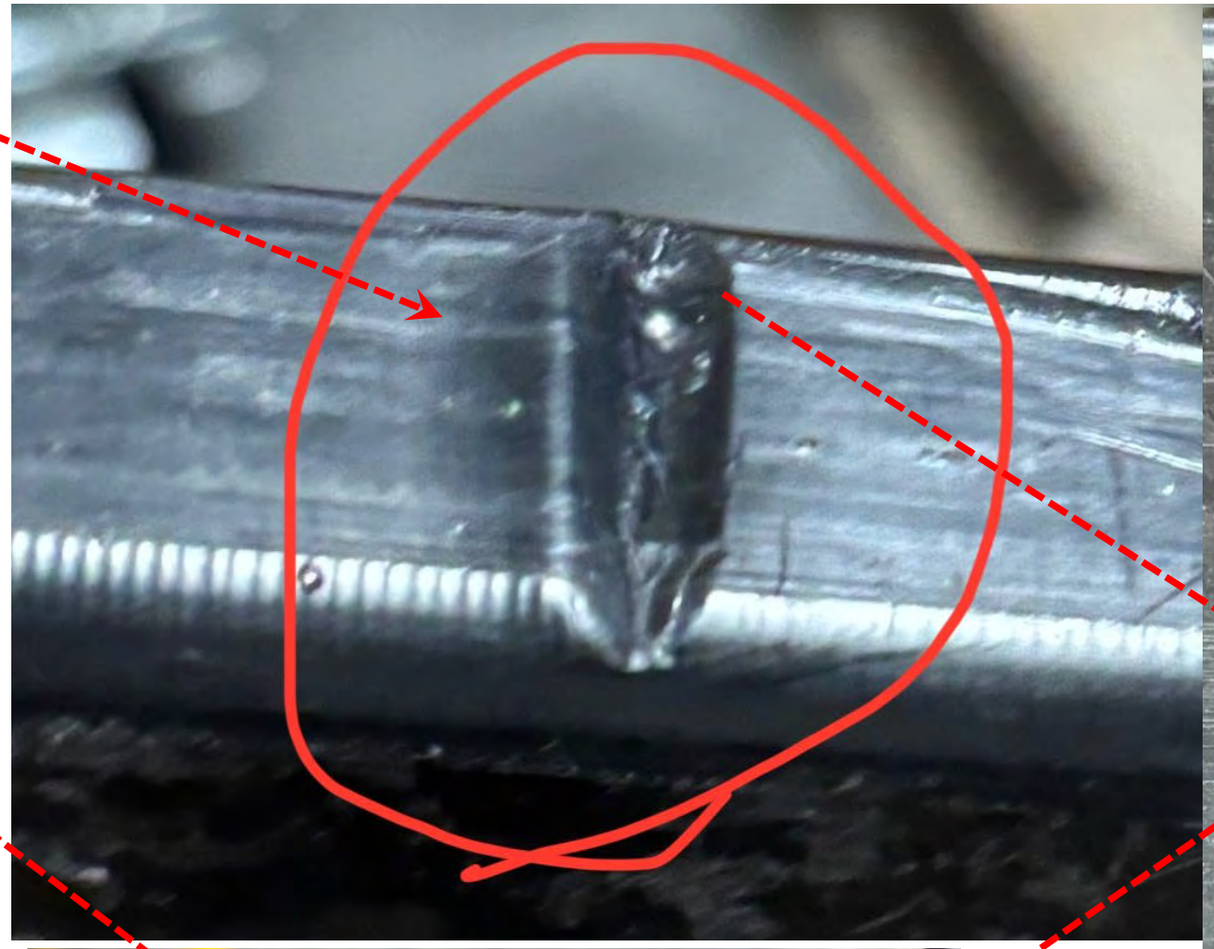
4) **Using Forklift: lift from under the skid board (RUSB) NOT on the top of skid board to avoid pinching REAL or squeezing the REAL layout.**

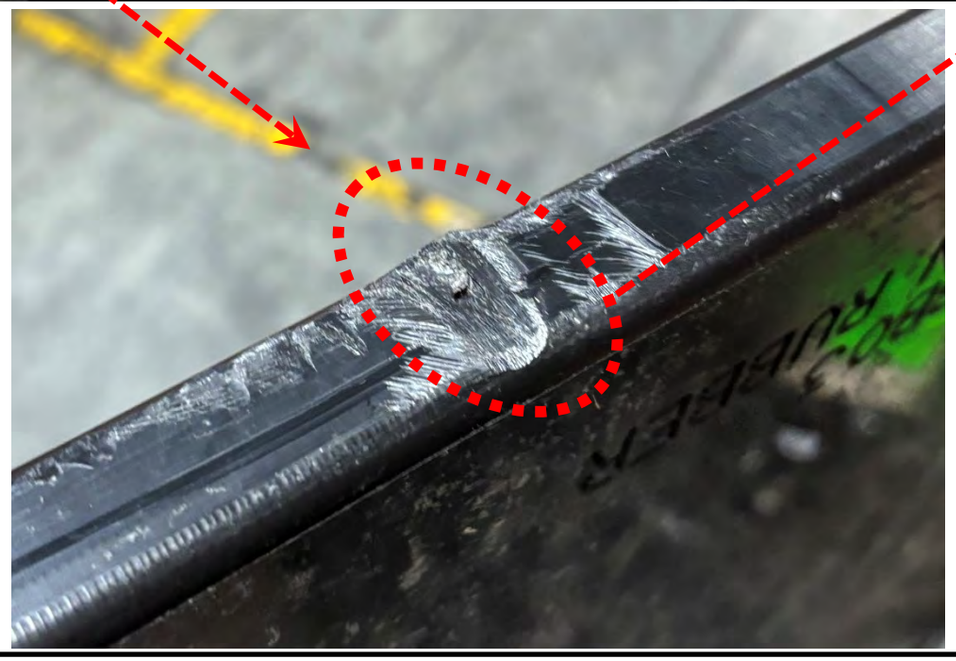
5) **Avoid pushing the forklift against RUSB edges.**

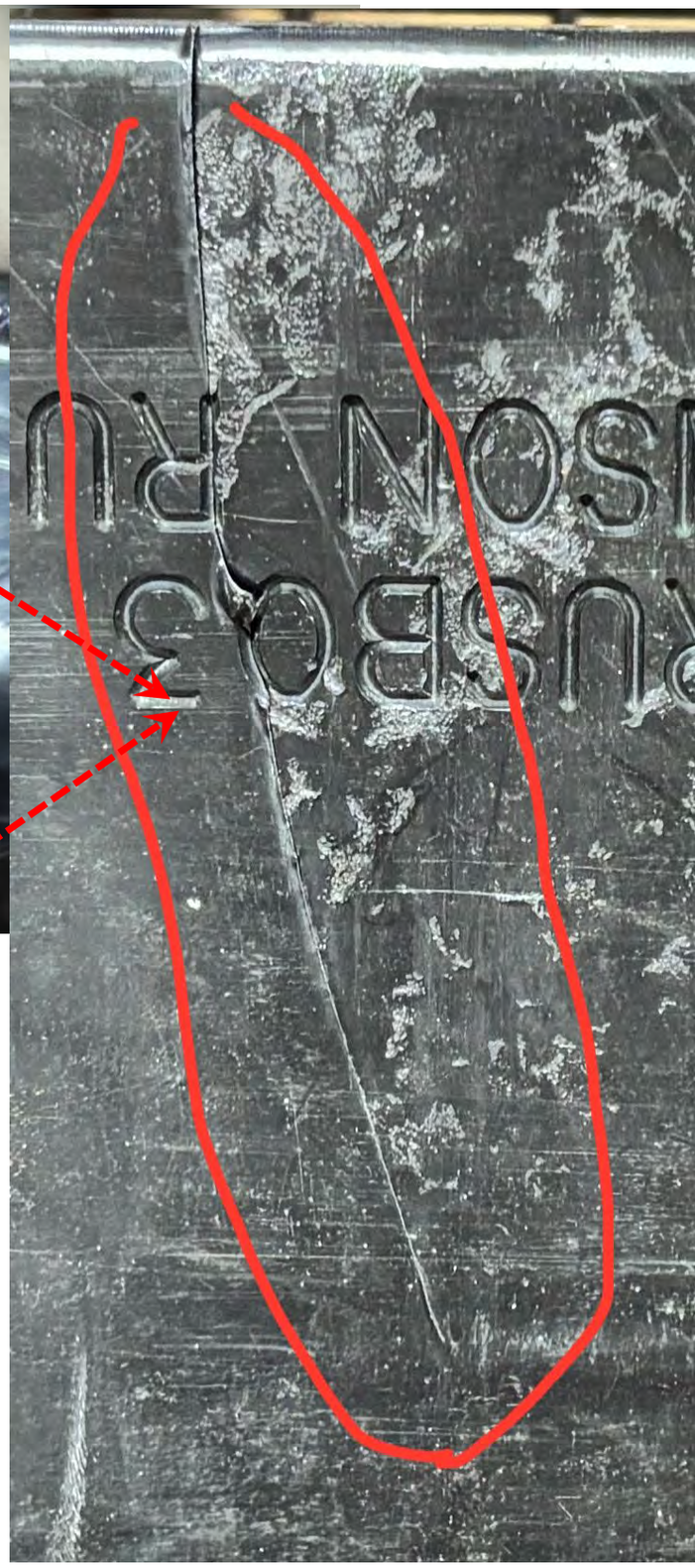
6) **Alternatively, role each CDS on a flatbed trailer.**

Example - Forklift Pressure shears RUSB & crack starts

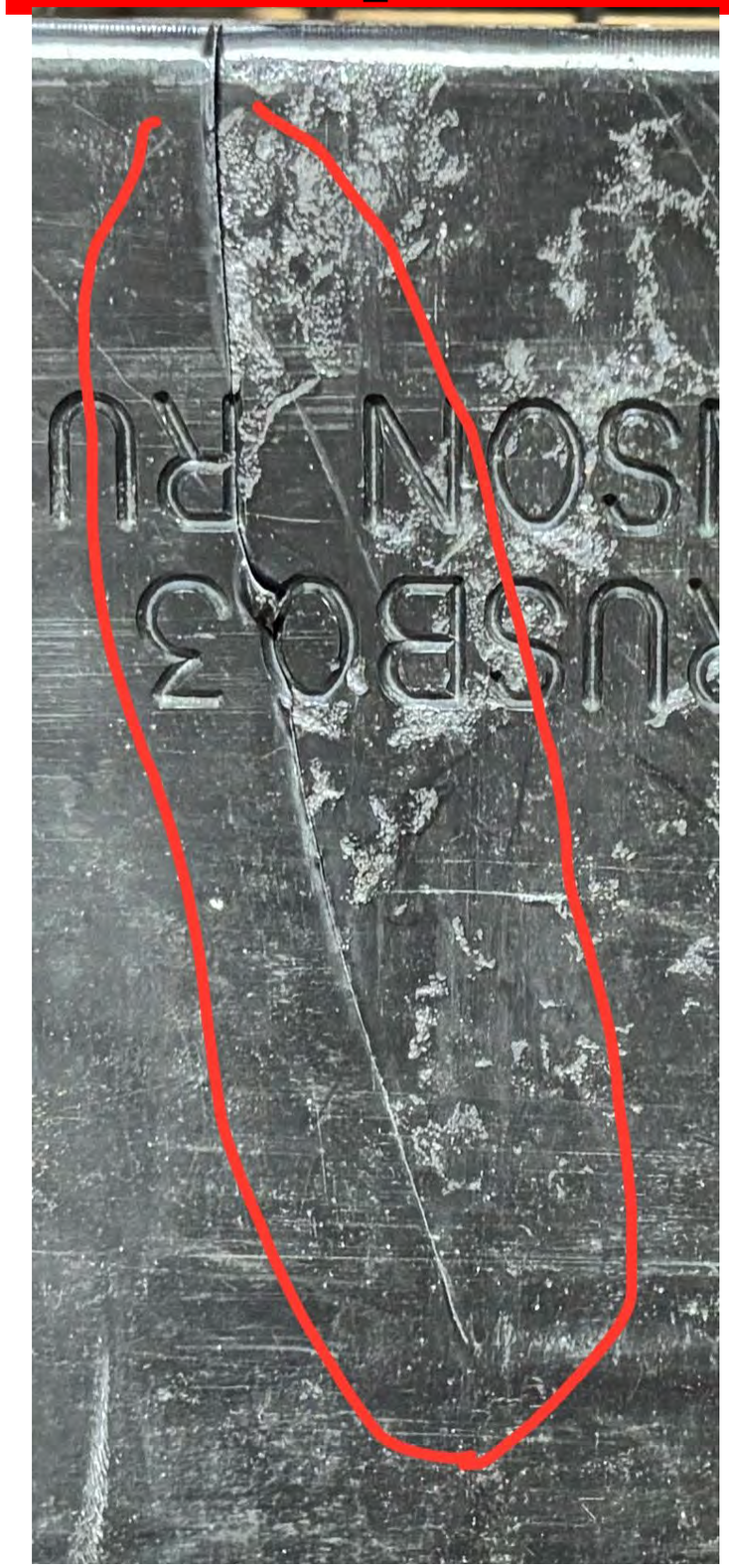








Example – Forklift Pressure shears RUSB & crack starts



Showing shearing effect cracking RUSB due to hard impact by forklift