

D4 Delta2p by BigWallGear



Photo by Ryan Sheridan

Thank you for your interest in the D4 Delta 2P Portaledge by Bigwallgear.com

History: I originally started to work on “foot-out” designs with a trapezoidal shape as an alternative to my A5 rectangular, side-to-wall portaledge designs, around 2000. The hinges on this early prototype created a “wobble” of the ledge which created instability. A basic principle of ledges I have learned is that the frame needs to be rigid--in other words no hinges or open corners.



In 2019, I announced via the BigWallGear.com newsletter:

Just want to let you know the past year I have been working on a radical new portaledge design for two people, where both people can have their head to the wall. There are a lot of advantages in comfort in this design, one of the best is that you always have a solid backrest (the wall) to lean if you want to sit up in your sleeping position. It's also really easy for each person to exit the ledge without a lot of weight shift or crawling over a partner. This new style of portaledge has been a dream of mine for many years, around 20 years ago I made a folding prototype, but it still needed work in the way the frame and suspension work together.

I am happy to announce that my new design, which I call the Delta2p (Delta shape, 2 person--I also plan a 1p and 3p version) has exceeded all expectation in terms of ease of setup and stability, thanks to many new portaledge design aspects I have learned with my other D4 design innovations during the past 3 years. It is also light and strong, with a six-piece curved-corner, hybrid diameter frame with the D4 ~~patent pending~~ bullet joiners, which packs to 36" and is taco-proof by design. Size is 79" x 56"/33", and weight is 6.5kg--very similar in usable space and weight as the A5/D4 Alpine Double portaledge.

If you would like to see the Delta2p development, check out my Instagram (@bigwalldeuce) . All design info is Creative Commons Open Source with Attribution (to “D4 design”) and posted on bigwalls.net

Super thanks for your interest!

John Middendorf

D4/BigWallGear

SAFETY WARNING-- Never depend on a portaledge to be a primary safety device--it is not a primary safety device like your harness or climbing rope. For use in an elevated setting, always use a harness and rope with proper climbing techniques, and tie into the main rope using a safety prusik or ascender to enable mobility and to ensure as little slack as possible between you and the main anchor at all times. This product is supplied as a finished prototype for expert use only, and as such, this product has no warranties, expressed or otherwise, and should therefore be considered experimental and extreme care taken if used in any situation where harm may result. Understand and accept the risks—you are responsible for your own actions and decisions. The activities depicted are inherently dangerous. All users must be trained and competent in the use of the equipment for these activities.

Activities involving the use of this equipment are inherently dangerous.

You are responsible for your own actions and decisions.

Before using this equipment, you must:

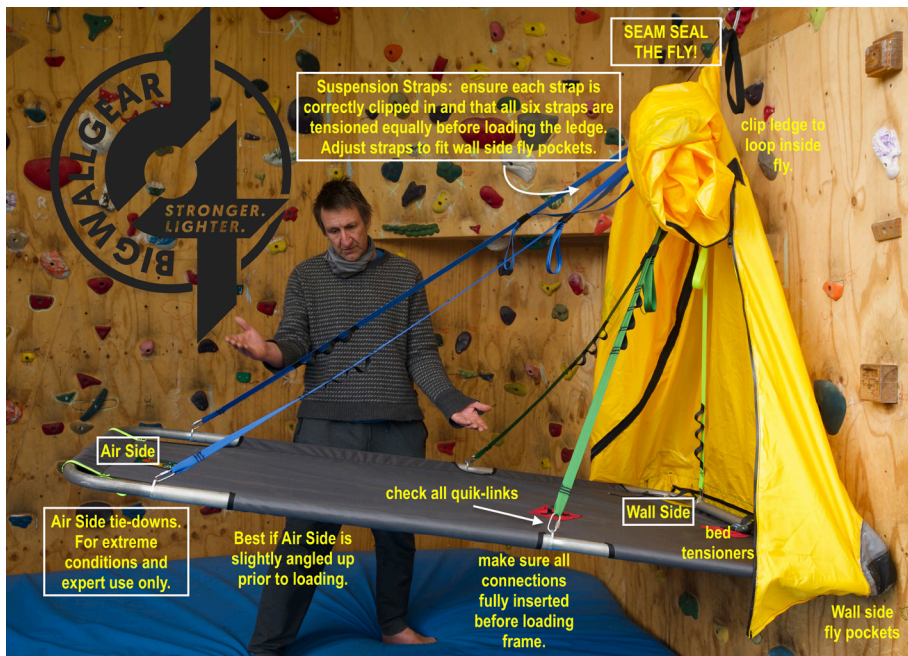
- Read and understand all Instructions for Use.
- Get specific training in its proper use.
- Become acquainted with its capabilities and limitations.
- Understand and accept the risks involved.



FAILURE TO HEED ANY OF THESE WARNINGS MAY RESULT IN SEVERE INJURY OR DEATH.

KEY UNDERSTANDINGS:

1. Always stay tied-in short with the climbing rope into main anchor!
2. The fly needs to be seam sealed! Seal all seams and the top clip-in loop with the urethane sealer included with ledge. Best to do on a warm (but not hot) day with ledge assembled.
3. Because of its cantilevered design, the suspension straps **MUST** be adjusted properly, especially the “air-side” straps. **PRACTICE ON THE GROUND** or hanging from a tree first!
4. Never try to forcefully adjust a portaledge with two people in it. Best to adjust before getting in, then one person can make fine adjustments while in the ledge. The Delta2p portaledge is designed for two people but not for two people bouncing around.
5. Adjust the ledge with straps so it fits into the rainfly. The load must be distributed equally on all straps, not too short, but also not too long so the load is on the straps, **NOT** the fly.
6. General: the Delta2p is a revolutionary new design, and greater care and practice is required to ensure proper deployment and use on the vertical. Before each use, check for any wear or damage of straps, fabric, quick-links, cam buckles, frame, and shock cord. Adjust shock cord (knot in wall side tube) if necessary with double fisherman’s knot.



DR. PITON'S ABRIDGED REVIEW OF THE D4 DELTA2P PORTALEDGE

How's it goin', eh? Hayden Robinson and I used the new Delta2p portaledge this October, 2020 on Hockey Night in Canada on El Capitan in Yosemite, California – the new ledge with the cantilevered design. Hockey Night was my 63rd different El Cap route, with our final bivy on the wall being my 800th night spent on the side of El Cap, not counting base nor summit bivys. I would guess I have spent the last 200 nights or so sleeping on D4 portaledges made by John “Deucey” Middendorf, helping to break them in and make sure they are the best they can be before they go out to market. My specific instructions were to “abuse the hell” out of the ledges in the real world – which I most assuredly did – so what I write to you now is not Big Wall Theory, but tried and tested Big Wall Fact that has been forged in the granite crucible.

I first tried out the D4 Delta2p ledge with Debbie Double D's a year ago in John Middendorf's factory in Tasmania, and I was impressed with its narrow profile and stability. Amazing to me is the fact that you can actually stand comfortably on the outside end of the ledge without causing the ledge to tip. This was unexpected as you would think it might slip, but it doesn't.



I figured the narrower profile of the Delta2p ledge against the wall would be an advantage when camping on anchors without enough horizontal spread. Think about it – the ledge is turned 90 degrees from a regular ledge, so if you are stuck camping on a narrow array of bolts, the suspension point will be less offset. Inside of John's factory, it made sense for two people to sit side by side, with our backs against the wall as a handy backrest.

Now let's flash forward from the austral summer to whatever the heck you call summer up here on the normal side of earth, where the water in the sink spirals down the drain counter-clockwise. Once we got the Delta2p ledge onto the big wall, I can say with certainty that this is the easiest ledge to set up and take down that I have ever used – and I've used them all. In my experience, no other ledge else even comes close – the bloody thing practically assembles itself. One of the reasons is the superbly crafted male-female connections using the D4 Bullet Joiner which allows the two tubes to fit together quickly, easily and intuitively.



If you are familiar with D4 ledges, then you know they don't have square corners like traditional ledges, where you have to fit two tubes into some sort of square corner piece. Instead, the “corners” of the D4's are round – like architectural aluminium railings – and the connection points are straight inline along the edges. “The bending of high alloy, thin-wall aluminium tubing is actually quite an art,” writes Deucey. So when you are setting up the ledge, all you have to do is line up the tubes, and in goes the Bullet Joiner – easy peasy. The rounded end gives you a lot more manoeuvring room during insertion than the tubes you've been fighting with for years. Notice the hole in the top of the bullet joiner – this is for the quick link that attaches the ledge suspension strap to the ledge. Clever, eh?

Pete Review, p2

Another thing that makes this ledge so easy to set up, not to mention easy to carry up to the base of the wall and back down from the summit, is because the Delta2p is incredibly and unbelievably lightweight. With its fly and storage sack, it weighs in at a mere 6.5 kg = 14.3 pounds, less than half of what those gigantic (brand X) contraptions weigh. So with the Delta2p ledge and fly packed together in the bag, you are left with a seemingly impossibly small package only 36" in length, with an elliptical cross-section about 12" wide by 6" thick. Now compare these specs to those big-ass old school ledges, and you know the ones I mean – those monstrosities you have to fight constantly especially in a bit of wind, the ones you can barely lift because they are so damn heavy, the ones with that super-annoying spreader bar that you are always battling, that damned spreader bar which is the greatest retrogression in portaledge design history?! Yeah, those ledges. So look – if you hate fighting those big heavy ledges, and if you find them as hard to assemble and take apart as I do, then the Delta2p is definitely the ledge for you! “One tip that often gets forgotten but is especially important with a cantilever ledge,” writes Deucey, “is to ALWAYS clip the ledge into a strong sling suspended to the main anchor, and then backed up with a rope or full-strength webbing. The ledge hangs much better when there is some space between the anchor point and the top clip. In other words, don't clip the top of your ledge directly to a bolt – leave some space and it will hang better. Doing so also keeps the wall side of the fly from touching the wall, and getting soaked in the runoff that flows along the surface of the rock. All D4 ledges and accompanying fly are designed keeping this in mind.”

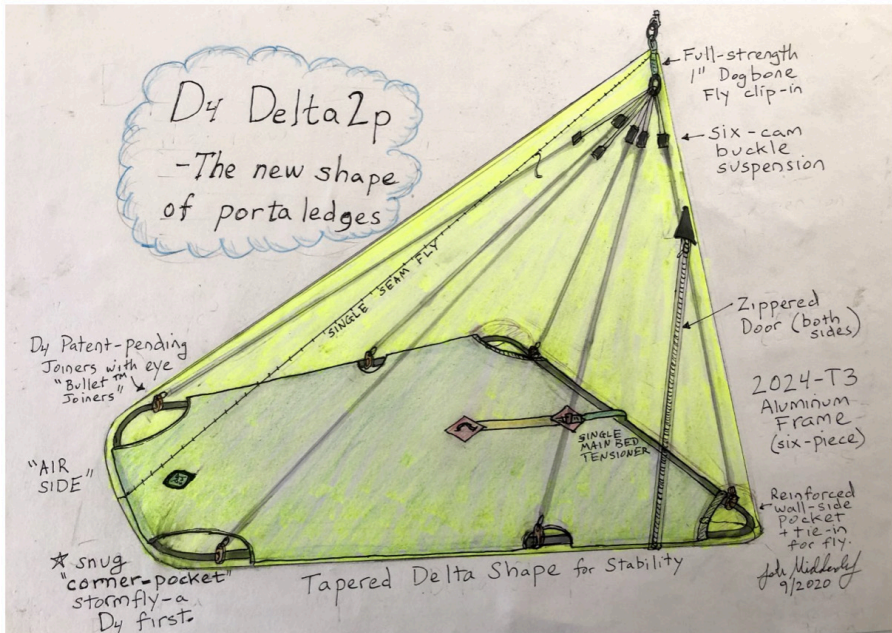


Another big surprise was how cool this ledge is to belay from! You can lie down, drink a beer, and get a really great view of what's happening with your leader above because your head is so far away from the wall! The way the straps are designed – with superb buckles and big grab loops on the free-hanging ends – means that when you want to adjust the pitch of the ledge based on whether you are lying, standing or sitting, it is a quick and easy pull to lower or lift the outside end, even while lying down. And when you want to stand up, these pull straps are exactly where you want them – just reach, pull, and stand.

Now the well-seasoned (experienced, not the smell) wall rat will understand this next bit, but I need to mention it to the tree-dwellers who are living in D4 ledges and helping to save our forests. You need to remember that portaledges are NOT safety devices, like a harness. Ledges can shift – although these new D4 designs are much more stable than the old school ledges – and they can become overloaded if not set up properly, in an optimal location and with the suspension tensioned optimally. Therefore, you can never depend on your portaledge as your primary anchor to the wall, and you must ALWAYS be attached separately to main anchor.

Pete Review, p3

“Another thing I really like about this fly design,” writes Deucey, “is that there are two zippered doors. It’s really good the way you can get in and out without disturbing your partner, or shifting the ledge. This will make a big difference on remote expeditions as well.” So if set up the ledge between the two loads docked on either side – easier with the narrow cantilever design! – then each partner has direct access to the top of his own pig, without making the other person have to do all the work.



Study this photo, and take a close look at all the fabulous new features on this D4 fly! It will keep you dry under the harshest and wettest conditions imaginable.

Now, as for sharing the ledge, there is no shark fin like you find in a traditional double ledge. Deucey has come up with a very simple alternative that you see in the photo – a single removable strap which can be completely removed for comfort if you are on your own, or perhaps if you are with your sweetie. Also noteworthy the same photo is that the entire bed is tensioned with a single buckle. How simple is that, but works with the tapered trapezoidal design [think about it]. So if you're tired of wrestling with those horrific tensioner straps on your (brand X) ledge, there is a Better Way. Cheers and beers from the wall, eh? —Pass the Pitons Pete



in
it

(Originally published in *Common Climber* 2021)

PACKING UP: Packing up the D4 Delta2p is essential for fast deploy, especially making sure the straps are organised and do not get twisted around the frame when packed. There is a clip-in loop inside the haulsack to ensure tangle free storage of the ledge in the bag. Always inspect the quicklinks to ensure they are fully secure onto the frame. See packing steps below (one of many folding configurations):



USE A SLING AND MAKE SURE LEDGE IS PROPERLY ADJUSTED
The D4 Delta2p ledge is designed to be set-up on a flat vertical wall. On a slab it is best to clip the ledge into a long sling rather than direct to anchor, and ALWAYS ensure that all climbers are tied into the climbing rope anchored into the main anchor, as high as possible.

Camp IV, Nose Route, El Capitan
Pic by Camden Clements (@instacam007).
Merryn Venugopal (@merskates) in cozy D4 Delta2p ledge.



USE OF THE STORM FLY

The fly is designed for the pockets to align with the corners of the ledge, so there is really only one proper length of the two wall-side straps when using the fly. The best practice is to set up the ledge, install the fly, tie the two corners into the ledge (the cord on the fly coming under the frame and tie into the side loops which tension the ledge), then adjust the wall side suspension so the fly fits wall side perfectly with no slack in the fly. This takes a bit of fine tuning to ensure the 3" web on the fly is fully between the ledge and wall. MOST IMPORTANT, make sure the load on the ledge is taken by the properly adjusted suspension straps, and NOT the fly.



C O R N E R
P O C K E T
T I E - I N S
T e n s i o n
the fly side to side
using the cord
and fitting the
corners into the
corner pockets.

TYING UP THE FLY

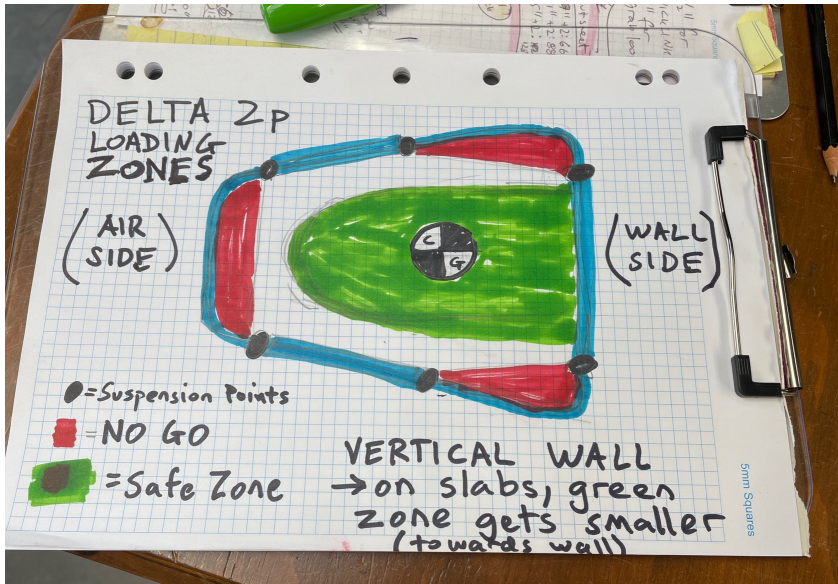
There is a handy cord sewn into the seam of the fly--you can use this cord to tie up the fly--make sure it does not get overloaded as it is not a full strength cord.



NOTES FOR SLABS--(see Ryan's general setup/adjustment tip next page)

Regarding slabs: Two important general portaledge tips:

1. Always clip your ledge into a sling, rather than direct to the anchor--this way, the ledge can be adjusted with the wall side straps longer than would be possible if hung direct off anchor. In general you want your straps on the ledge to be as long as possible. too short, and excessive loads on the frame. Also on slabs, generally the "airside" has to tilt up a bit--otherwise as you discovered, if the wall side is higher than the airside, the ledge can slip upwards. Adjust the ledge with only one person in the ledge, with the airside higher than you would think. When the second comes in, the ledge should still be tilted up a bit, so the wall side does not slip up. This is true for any ledge model or configuration.



MORE TIPS--see also bigwallgear.com and [instagram.com/bigwalldeuce](https://www.instagram.com/bigwalldeuce)

Don't forget to seam seal all seams on the rainfly of the ledge using the included tube of urethane sealer (ShoeGoo). Practice setup and take down of the ledge on the ground prior to taking it up on a cliff or tree!



ryansheridan @bigwalldeuce I havent had any issues yet. I give it a little bounce and shake test while adjusting the straps. Also push myself and the ledge away from the wall by laying on my back like a turtle and pushing out. Once adjusted proper the ledge is bomber. ❤️



John Middendorf 3 minutes ago (edited)

The main trick to adjusting a portaledge in general, is do the major adjustment by eye BEFORE getting into the ledge, then do fine adjustments while in the ledge (as close to center of gravity as possible), then do SMALL adjustments on each strap to get level. The mistake people make is to over adjust, then they need to go back and adjust the other side, ever shortening the straps. Longer straps are better, but make sure it still fits into the fly. Thanks for reminding me to mention this--small adjustments when in the ledge are the key to getting it flat efficiently.

👍 🗑️ ❤️ REPLY



John Middendorf 1 second ago

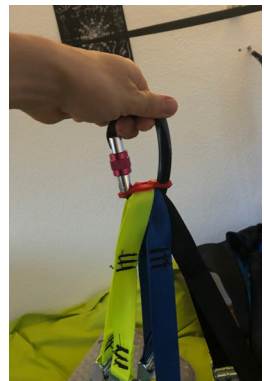
and also do not try to adjust a two person ledge with two people in it--if it needs adjustment, one person needs to unweight the ledge. Two people trying to jump around to adjust puts huge stresses on a portaledge frame. Back in the day when frames were fragile 1" tubes, this was obvious: these days, ledges are stronger but still can be overloaded with careless use. Take care!

don_mirra_photography

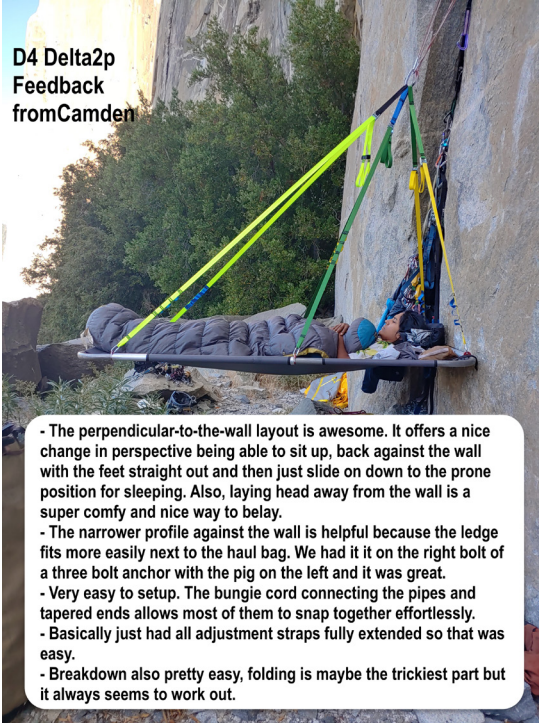
commented: 7) try not to clip the ledge apex directly into a bolt, best to put it on a 12 inch runner. This will reduce the suspension angles and aid in stability. 8) adjust the wall side suspension so it fits the fly perfectly. Mark the suspension and try to never adjust it. Instead just adjust the air side and mid suspension for the preferred sleeping angle. If you use a 12 in runner and only adjust the air side and mid, set up will be fast and the ledge will be set perfectly for the rain fly should you need it. 38m



Tip: You can add an elastic to the carabiner to ensure the straps don't get tangled or wrapped around each other. See picture.

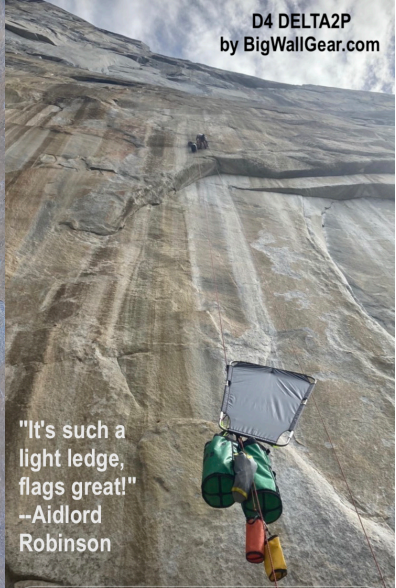


**D4 Delta2p
Feedback
fromCamden**



- The perpendicular-to-the-wall layout is awesome. It offers a nice change in perspective being able to sit up, back against the wall with the feet straight out and then just slide on down to the prone position for sleeping. Also, laying head away from the wall is a super comfy and nice way to belay.
- The narrower profile against the wall is helpful because the ledge fits more easily next to the haul bag. We had it on the right bolt of a three bolt anchor with the pig on the left and it was great.
- Very easy to setup. The bungee cord connecting the pipes and tapered ends allows most of them to snap together effortlessly.
- Basically just had all adjustment straps fully extended so that was easy.
- Breakdown also pretty easy, folding is maybe the trickiest part but it always seems to work out.

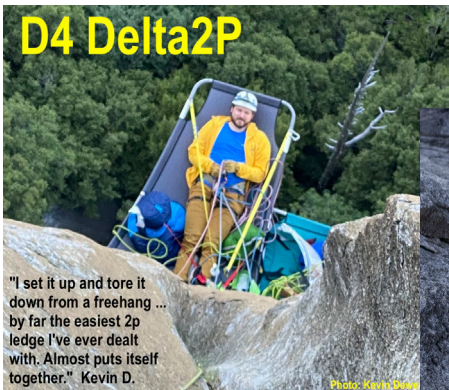
**D4 DELTA2P
by BigWallGear.com**



"It's such a light ledge, flags great!"
--Aidlord Robinson

Flagging
I don't recommend flagging. The ledge is easy to take down and setup and your ledge will last a lot longer if not dragged up a wall.

D4 Delta2P



"I set it up and tore it down from a freehang ... by far the easiest 2p ledge I've ever dealt with. Almost puts itself together." Kevin D.

Photo: Kevin D.

**EXPEDITION and
ADVANCED USE: Airside
tie-downs for expert use only.**



**First remote
big wall
expedition
with the D4
Delta2p**



2021 D4 Delta2p

As of March, 2021, 24 D4 Delta2p's have been produced. 8 of these went to expert product testers. The design has been well tested and is proving robust, but it is still a single-point portaledge that should not be overloaded and can tip not loaded with care and balance. Open Source design notes and plans on bigwalls.net

D4 Delta2p Portaledge advantages:

- 2-person portaledge with separate exit/entry doors for each person.
- Cantilevered design is a more stable platform.
- More headroom for both climbers.
- Takes up less area at crowded belays.
- Compact 6-piece design almost self-assembles.
- Easy bed tensioning with one main tension buckle.
- Fully enclosed fly with corner pocket security.
- Airside-tube tie-downs for extra stability.
- More comfortable as a belay ledge.
- Light and strong.



"D4 Design"
(open source)
-->see bigwalls.net)

SPECIFICATIONS: D4 Delta2p (made in Tasmania)

- Delta2p size: 79" x 56"/33"
- Weight: 14.5 lbs. w/ fly and haulsack.
- 2024-T3 Aluminum frame.
- 600d ripstop Bed.
- 300d pu5000 Fly.
- Cam-buckles & 1" seatbelt-web.
- 840d coated Haulsack.

REPAIRS AND WARRANTY

Small tears and abrasion holes are expected as you are using a light-weight tool on rough rock. If you get small tears/holes on the bed or the fly, repair with urethane sealant (Shoe Goo, Aquaseal). For large tears, use ripstop self adhesive repair tape (McNett is a very good brand). For larger repairs, contact Barry at <http://d4portaledge.com> (Colorado) if in USA or Europe. In Australia, contact John at BigWallGear.com

