

A large sea turtle, likely a hawksbill, is swimming towards the right in clear, blue water. The turtle's shell is dark with light-colored, mottled patterns. Its flippers are also dark with light-colored, webbed patterns. The background shows a vibrant coral reef with various colors of coral and sponges. The text "The Villages Scuba Club" is overlaid in white, sans-serif font in the upper left quadrant.

The Villages Scuba Club

Let's Talk Flippers

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Let's Talk Flippers

- Dive Fin characteristics
 - Full Foot vs. Open Heel Fins
 - Open Heel Fin Straps
 - Fin Material
 - Fin Types
- Blade Fins vs. Split Fins
- Considerations
- Maintenance of Fins

Full Foot vs. Open Heel Fins

- Full Foot Fins -
 - Shoe-size specific
 - Doesn't require dive boots -
 - Great for warm water boat diving, less gear to pack
 - Not so good for shore or cold water diving
 - Consider nylon dive socks for comfort
 - Divers often experience pressure on the top of your foot and your toes
 - Non-repairable
- Open Heel Fins -
 - Tee shirt sizing with lots of adjustability
 - Typically worn with a boot -
 - Better for shore diving
 - Can change boot for more (or less) warmth
 - Considered to provide better feel and more efficient since strap tends to connect foot to pocket more completely
 - Replaceable Heel Straps



Open Heel Straps

- Rubber Straps
 - Cheapest alternative
 - Manual adjustment and quick release buckles
 - Considered more failure prone
- Rubber Cord straps
 - Self Adjusting
 - Typically have pull tab to help don and doff
 - Considered more failure prone than Bungee Cord straps
 - I actually could not find any rubber cord straps for sale
- Bungee Cord straps
 - Self Adjusting
 - Typically have pull tab to help don and doff
 - Considered more comfortable than Rubber Cord straps
- Spring Straps
 - Most expensive strap type
 - Self Adjusting
 - Some have pull tab to help don and doff
 - Considered least comfortable straps
 - Stainless steel straps have very low failure rate.



Fin Material

- Single Piece Rubber
 - Typically only used on “technical” fins such as Scubapro Jets
 - Stiff fins.
 - Heavy fins, negatively buoyant - 5.6 lb
 - Often fin used with dry suit diving
 - Durable material, injection molded
- Single Piece Monprene (or similar)
 - Thermoplastic Elastomers (TPEs) with Rubber-like feel, yet softer and lighter.
 - Monprene is designed for skin contact
 - Stiff fins.
 - Light fins, neutral to positively buoyant - 3.6 lbs
 - Durable material, injection molded
- Combined Material
 - Rubber foot pocket attached to combination of plastic and rubber
 - Fins can be of various stiffnesses and can have variable stiffness.
 - Light fins, neutral to positively buoyant - 3.6 lbs
 - Assembly method allows for variety of colors
 - Less durable due to assembly of materials



Fin Types

Blade Fin

- Stiff to Soft
- Often have side rails to increase stiffness
- Good for Scissor and Frog Kick



Split Fin

- Slightly Stiff to Soft
- Some have side rails to increase stiffness
- Good for Scissor, poor for Frog Kick



Pivot Fin

- Stiff to Soft
- Good for Scissor, fair for Frog Kick



Free Diving Fin

- Soft to Very Soft
- Good for Scissor and Frog Kick
- Requires strong legs to move



Blade Fins vs. Split Fins

- Several studies have shown that, for scissor kicking at slow to moderate speeds, the style of fin has minimal effect on overall efficiency.
 - Blade fins push more water but take more energy to complete the kick.
 - Split fins push less water but are easier to kick than blade fins, allowing for a faster rate of kick while using the same energy.
 - Pivot fins push water similar to blade fins and reload the blade when completing the kick cycle. Similar energy requirements.
- Another study showed that softer blade and split fins actually use slightly less energy to travel the same distance, although it will take longer.
- One of the studies also showed that blade fins continued to perform well at higher speeds while split fins performance was degraded at higher speeds. Think about currents!

No real difference between Blade and Split Fins for Scissor Kicking at low to moderate speeds.

Considerations

- Blade stiffness vs. type of diving and fitness level.
 - Calm to slow currents - any style fin
 - Moderate to higher currents - blade or pivot fins
- Proper fit is key -
 - Full Foot Fins should be snug but not tight.
 - Open Heel Fins foot pocket sizing - will your boots fit snugly in foot pocket.
- Replaceable straps. Consider buying a replacement strap for your save-a-dive kit when you buy your fins.
- Negative, positive or neutral buoyancy.
- Anti-slip features under foot pocket for boat diving.
- Unique colors may help your dive buddy keep you in sight.

Price Comparison

- Scubapro Fins Retail Price



Maintenance of Fins

- Rinse in Fresh Water and Dry after use.
- Inspect strap and connector for wear
- Put inserts in foot pocket
- Store flat or vertically. Most manufacturers recommend storing foot pocket down when storing vertically.

References

- Truefin testing - <https://www.truefintechical.com/testing>
- Discussion of Force Fin testing on scubaboard.com - <https://scubaboard.com/community/threads/what-is-the-best-fin.628249/>