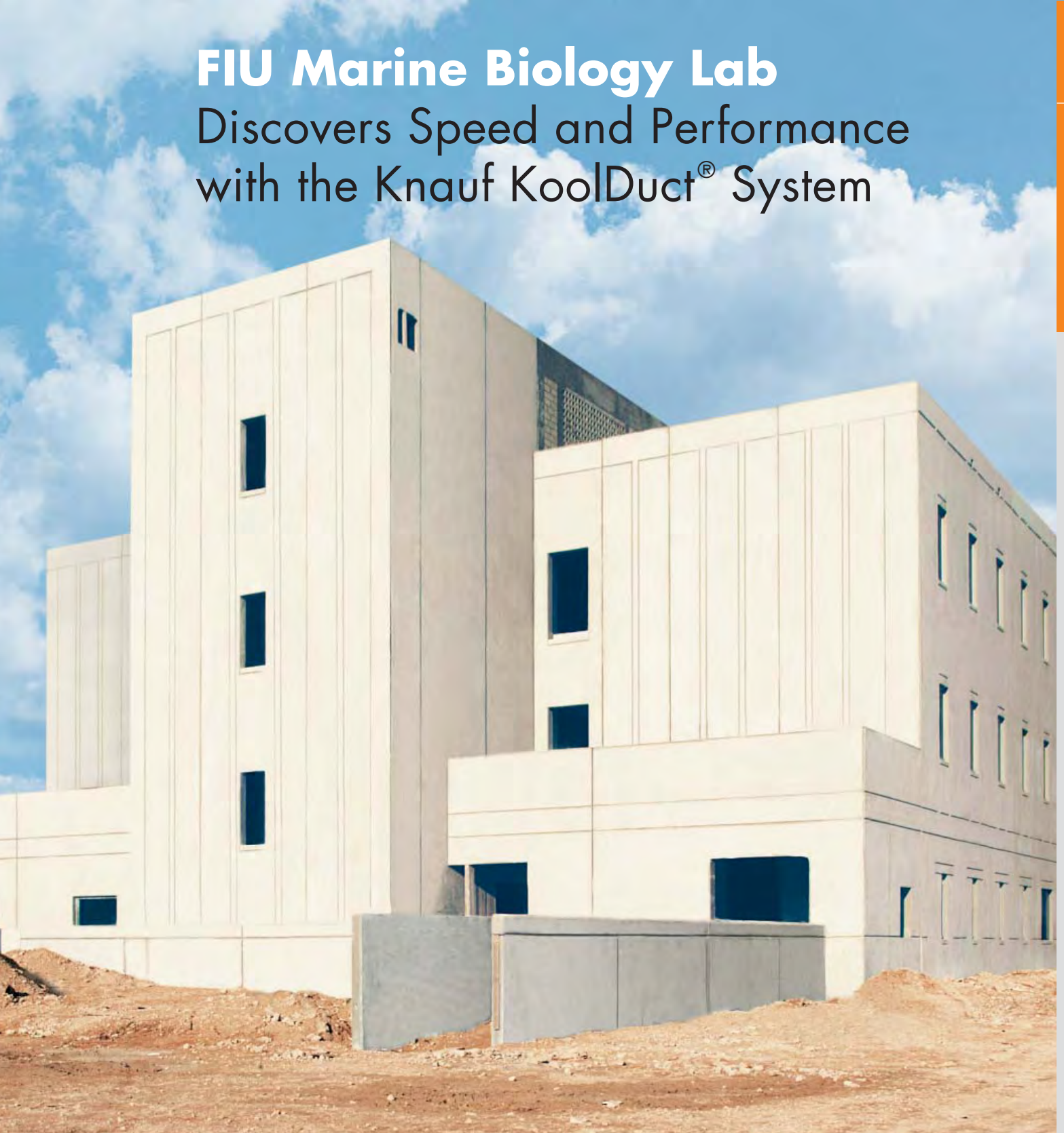


FIU Marine Biology Lab Discovers Speed and Performance with the Knauf KoolDuct® System



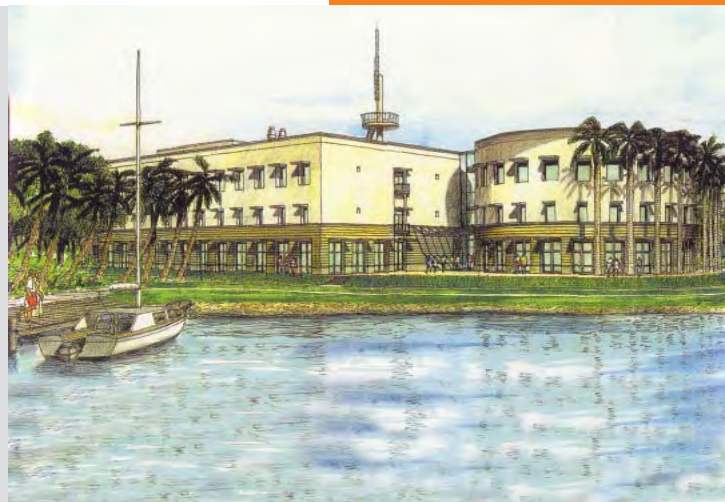


The Knauf KoolDuct® System Puts the Florida International Marine Biology Lab On the Cutting Edge of Comfort



At Florida International University's Biscayne Bay campus, faculty and students alike are anxiously awaiting a new home for FIU's Marine Biology program. At the edge of campus on the Bay, a 52,000 square foot, three-story laboratory complex will offer new opportunities to explore the mysteries of undersea life.

In the new FIU Marine Biology laboratories, professors and students will conduct cutting-edge research on all manner of saltwater creatures, in an effort to learn more about the 70% of the earth that is covered by oceans, and preserve this environment for the future.



Project Profile

Marine Biology Laboratory Complex
Florida International University—Biscayne Bay Campus
North Miami, Florida

Size:	52,000 square feet
Owner:	Florida International University
Architect:	Spillas Candella
Consulting Engineer:	TLC Engineering
General Contractor:	Centex Rooney
Air Conditioning/ Insulation Contractor:	Thermal Concepts, Inc.
Knauf Product:	KoolDuct System

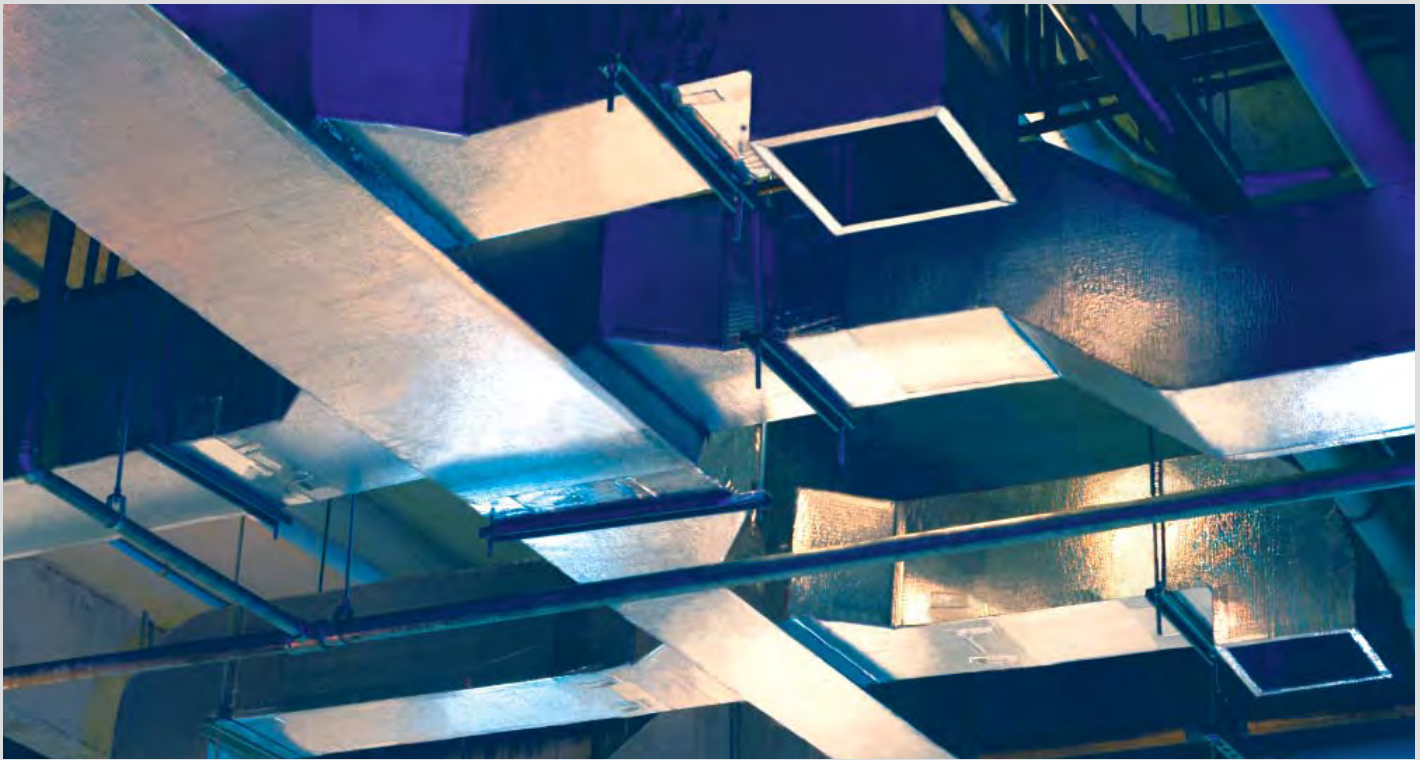
In keeping with this mission, it was important that the marine biology building itself offer a clean, comfortable environment suitable for scientific study. These demands extended to the building's HVAC system and ductwork, where Knauf Insulation's KoolDuct System presented an all-purpose solution.

Challenges in the Air

Knauf is a leading manufacturer of fiber glass insulation products and the North American distributor for KoolDuct, a high-performance pre-insulated duct system, developed in Europe. The Knauf KoolDuct System features a CFC-free closed cell phenolic foam board faced on both sides with reinforced aluminum foil, using patented aluminum flanges to connect duct sections and assure a strong, tight closure.

The Knauf KoolDuct System offers significant advantages over sheet metal ducts in terms of weight, space, installation time, installed costs, air leakage and energy performance. KoolDuct is a UL 181 Class 1 rated system and easily meets SMACNA Leakage Class 6 while providing thermal performance of R-6.7 at 7/8" (R-8.5 at 1³/₃₂").

Onsite: Florida International University Marine Biology Lab



Left: The Thermal Concepts team (left to right): Brian Becraft, Charlie Hahn, Hector Aparicio, Edwin Garcia, Lee Hodge, Ben Guerrios and Todd Allen.



Middle: The Knauf KoolDuct V-Groove Table simplifies fabricating ductwork on-site.



Right: Thermal Concepts' on-site fabrication shop, made from two empty trailers.

However, all of these features took a back seat to a more immediate issue on the FIU project. The marine biology labs required a non-fibrous duct solution, but concerns were raised over potential corrosion on sheet metal ductwork with prolonged exposure to salt particles in the coastal air.

That's when the team at TLC, the project's specifying engineers, suggested KoolDuct, the Knauf system that offered the aluminum construction that could stand up to corrosion at a competitive price.

And TLC knew that this was only the beginning to the benefits that the Knauf KoolDuct System would bring to the FIU Marine Biology project.

The Knauf KoolDuct System Helps Beat the Clock at FIU

TLC Engineering is one of the largest engineering firms in the Southeast, operating in every major Florida market with nearly five decades of experience. TLC prides itself on embracing leading-edge technologies—so the firm was quick to recognize the value of the Knauf KoolDuct System. TLC was familiar with KoolDuct from previous projects and knew the system would be a perfect fit for the University project. They won quick agreement from Spillas Candella, the project’s architectural firm and another enthusiastic advocate of the Knauf KoolDuct System.

“We initially proposed stainless steel ductwork for FIU to combat corrosion, but that just wasn’t economical,” said Tom Farmer, Project Engineer for TLC. “KoolDuct was a cost-effective alternative; although it’s fairly new in our market, it’s clearly a quality system. From an engineering standpoint, the UL 181 and SMACNA Class 6 ratings mean that KoolDuct is a high-performance system that will deliver the installed performance we need, as good or better than metal ductwork. We were happy to specify KoolDuct as an alternative system.”

“We’ve been very pleased with the progress so far. Joe Vincenti

(Knauf KoolDuct Business Development Manager) has been very responsive in answering questions about the product, and everyone is happy with the installation—it’s very clean and looks great. The speed of installation and flexibility of the system are also a huge plus.”

Centex Rooney, the general contractor on the Florida International lab, joined TLC and Spillas Candella in embracing the Knauf KoolDuct System. Allen Messer, Senior Estimator for Centex recognized the system’s advantages in cost, jobsite productivity and installed performance.

“I’ve been a fan of KoolDuct ever since I was introduced to the system,” said Messer. “With the rising cost of sheet metal, KoolDuct is a great value and offers several unique advantages over metal. Its lightweight construction makes it easier and faster to install, saving significant time and effort on the jobsite. The installed performance is excellent and the finished appearance is better than wrapped ductwork. I’m pleased that TLC and Centex could work together on this project and look forward to using KoolDuct on more projects in the future.”



Knauf KoolDuct Panels, manufactured of CFC-free phenolic foam, form the basis of the UL 181 Listed system. Combined with patented aluminum flanges to connect duct sections, the Knauf KoolDuct System offers a superior approach to HVAC ductwork with consistently high performance for every installation.



Double Play

Simple Fabrication and Quick Installation with the Knauf KoolDuct System

This confidence in the Knauf KoolDuct System is paying off on the jobsite, where the system has helped Thermal Concepts, the air conditioning contractors on the job, stay productive and respond quickly to unforeseen installation issues.

The KoolDuct Payoff

For more than 20 years, Thermal Concepts has built a reputation as one of the top “Class A” air conditioning contractors in

southern Florida. Having used the Knauf KoolDuct System on previous projects, Thermal Concept’s management knew that the product would save time and resources on the Marine Biology project.

“As a pre-insulated duct system, KoolDuct eliminates the need for two trades on the jobsite,” said Larry Mauer, co-owner of Thermal Concepts. “Instead of installing sheet metal duct, having it inspect-

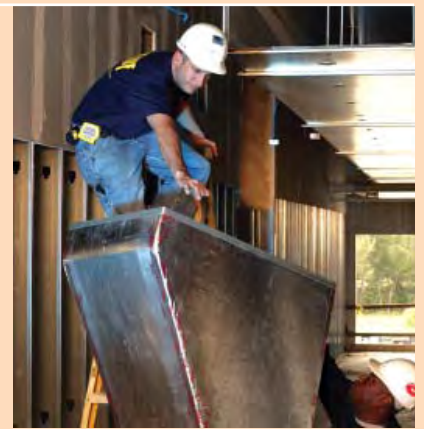
ed, then calling in another crew to wrap insulation, KoolDuct is installed and done. The FIU project is on a fast track and we knew KoolDuct would help us meet our schedules.”

To meet the demanding construction schedule, the Thermal Concepts team created a fabrication shop on the jobsite, using two empty containers with a covered work area between them.

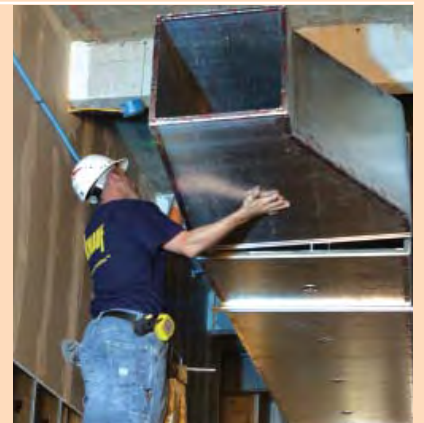


"Fabricating KoolDuct is easy," said Gary Becraft, manager of Thermal Concepts' duct fabrication shop. "The panel handles and cuts well, and Knauf supplies a full line of tools and flanges for assembly, plus training for our guys. That made the on-site fabrication possible, and it's made a world of difference."

The Knauf KoolDuct System is easy to handle and install—only 15% the weight of sheet metal on average.



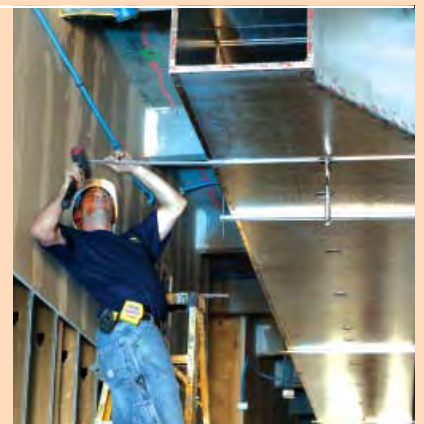
Align gasket-lined flanges of the new KoolDuct section with the flanges of the stationary duct.



Temporarily **clamp** sections of duct together, in preparation for final bayonet joining.



Connect the sections by sliding a bayonet into the channel created by the joined flanges on all four sides.





The Knauf KoolDuct System

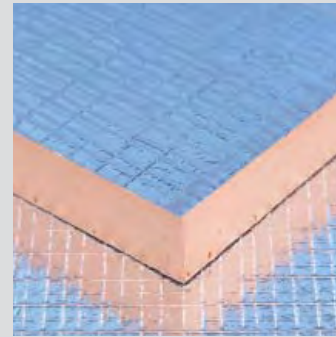
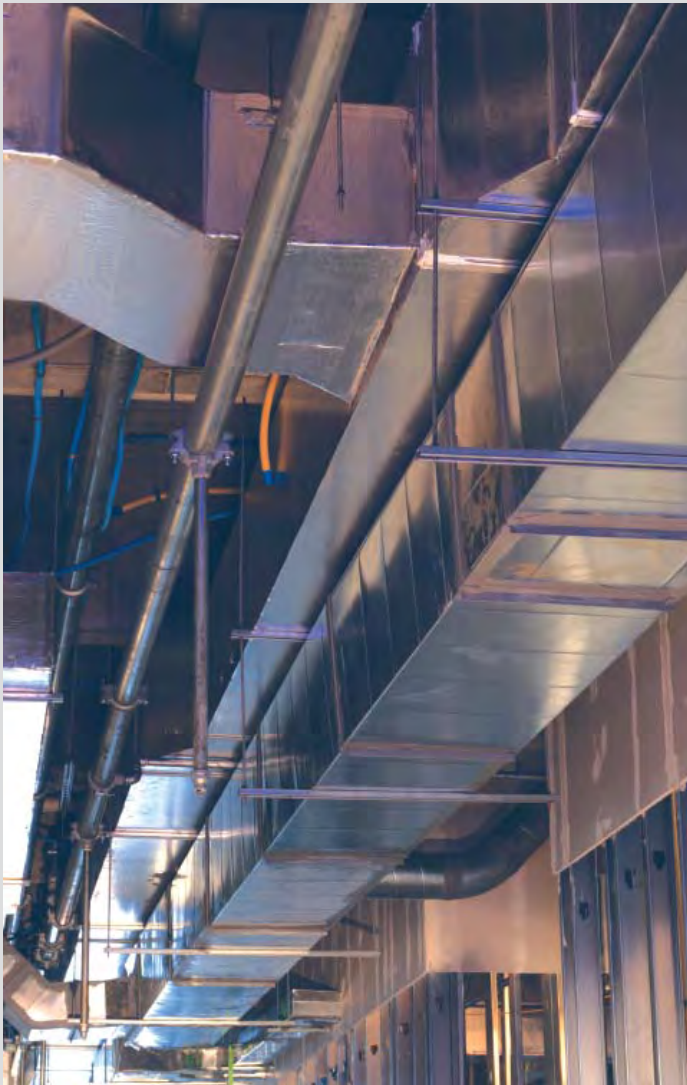
Real World Solutions for Staying Out in Front

With multiple duct sizes ranging from 60" x 30" down to 8" x 8" over three floors—on-site fabrication also means that the Knauf KoolDuct System is adaptable to changing circumstances on the job.

"Everybody knows that things are never exactly the same in the real world as they are in the blueprints," said Becraft. "If you fabricate a piece of metal ductwork off-site, then during installation you learn there's a pipe in the way—well, you're stuck."

Staying Out In Front

Brian Becraft, Gary's son and the foreman in charge of the FIU crew, also sings Knauf KoolDuct's praises. Becraft supervises a crew of six, including two fabricators, two KoolDuct installers, and two employees focused on cleanup and the installation of metal exhaust ducts. But KoolDuct makes Becraft miss his days as a full-time installer.



Left: The Knauf KoolDuct System is a space saver since it can be installed flush to the ceiling.

Above: KoolDuct panels are made of CFC-free phenolic foamboard faced on both sides with reinforced aluminum foil.

Below: Detail of installed duct with a fan at the end.



"I'm a metal guy, always have been," said Becraft. "But this stuff [KoolDuct] makes me want to just install all day. It's fast, clean, you don't cut yourself...the fabrication is easy, but it's the installation where you really see the fruits of your labors."

According to Becraft, the speed and time savings with the Knauf KoolDuct System are tremendous. "A mechanic and a helper can usually hang an average of 40-60 feet of sheet metal duct in a shift.

But with KoolDuct, you can do 200 feet a day easily, probably more like 250. Early on in this job, we started hanging KoolDuct down a 120-foot corridor; at the time, the plumber had run pipe down two-thirds of it—by the end of the day, we'd buried the plumber...the GC had to tell us to slow down!"

A driving factor behind the Knauf KoolDuct System's quick installation is the lightweight nature of the product; as a pre-insulated foam



panel, KoolDuct is just 15% the weight of sheet metal on average. This allows easy handling and streamlined processes—for example, the ability to use a ladder rather than a lift to raise a 13' section of Knauf KoolDuct. During the FIU project, an unexpected construction hurdle brought the advantages of a lightweight product to the forefront.

“The masonry work on the stairs between floors had run into delays, so we had no access to the second and third floors except ladders,” recalled Becraft. “With KoolDuct, we could just hand big sections right up the ladders, no problem—there’s no way we could have done that with sheet metal.”

Although Knauf KoolDuct is easy to handle, it’s a heavyweight when it comes to withstanding wear and tear, according to Becraft. “KoolDuct is also really easy to repair. We’ve had pieces bumped by a lift and damaged—you just cut out the affected piece, replace it, seal it and you’re ready to go.



The Knauf KoolDuct System An All-Around Winner for FIU

The Knauf KoolDuct System has contributed significantly to the success of the FIU Marine Biology project. "Thermal Concepts has been a stellar performer, and KoolDuct has fit in perfectly," said George Gray, Centex Rooney's on-site supervisor. "The system has helped push the job along, and the time savings has been a huge bonus."

As much as the Knauf KoolDuct System has helped TLC, Centex Rooney, Thermal Concepts and the rest of the construction team meet their goals, the system will deliver even more value after the facility is complete. Through two rounds of air leakage testing, Knauf KoolDuct has yielded exceptional readings of 0.4% and 0.6% air loss—an indication of the outstanding installed performance that will keep the FIU Marine Biology lab comfortable and energy-efficient.

With Knauf KoolDuct, FIU's lab space will be conditioned by an insulated duct system that delivers superior thermal performance while meeting the toughest air leakage standard—SMACNA Class 6. Its aluminum-faced airstream surface offers cleanability and indoor air quality assurance. And with a clean, finished appearance, the Knauf KoolDuct System blends into the background as it does its work.

After the opening of the Florida International University Marine Biology building, professors and students likely won't spend much time thinking about the building's air handling system. But nonetheless, their cutting-edge research environment will be supported by a cutting-edge product—the Knauf KoolDuct System.



The Knauf KoolDuct System includes

Top: Patented aluminum Grip Flanges that simplify duct jointing and enable quick connection.

Center: A complete set of professional hand tools, developed to fabricate ductwork efficiently and economically.

Bottom: Automatic machinery simplifies V-grooving and bending operations.

For more information call (800) 825-4434, ext. 8215

or visit us online at www.KnaufInsulation.com

KNAUF INSULATION



Knauf Insulation GmbH
One Knauf Drive
Shelbyville, IN 46176

Sales and Marketing (800) 825-4434, ext. 8283

Technical Support (800) 825-4434, ext. 8215

Customer Service (866) 445-2365

Fax (317) 398-3675

World Wide Web www.KnaufInsulation.com

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