

# The Challenges of High Density Infrastructure

We are all familiar with 5G technology and the race to be the first to market, at a corporate and national level. 5G brings greater bandwidth, the promise of low-latency communication, and increased capacity through massive Multi-In/Multi-Out (MIMO) capability, all needed to achieve real-time response for applications such as autonomous vehicles, industrial automation and augmented reality. Lesser known but a companion enabler will be the release of Wi-Fi 6. Both technologies will transform enterprises and enable the creation and expansion of Smart City and Smart Building infrastructures.

A fiber backbone is foundational to 5G in the urban city, Wi-Fi 6 in the high-rise, and quality high-speed access in urban and rural communities. 5G and Wi-Fi 6 drive a need for high bandwidth, low latency connectivity which simply isn't achievable with today's copper-based technologies. Each small cell site takes 6, 12, and in some estimates 24 optical connections. By 2020, it's estimated 378,000 small cells will be deployed—two times the number in 2018. In response, providers are using high density cabling with 864 fibers, 1728 fibers and even higher. However, the size and weight

of traditional ribbon and loose tube cables becomes a deterrent for providers already faced with congested metro pathways.

Fujikura first released their patented SpiderWeb Ribbon® (SWR®) in 2012 focused on addressing these challenges. Optimized for easy mass-fusion splicing, SWR reduces installation time and achieves the reliable, low loss connections necessary to meet the bandwidth and latency requirements of 5G. Also, SWR enables standardizing on one cable technology for both single fiber and ribbon applications.

AFL has developed Wrapping Tube Cable (WTC) solutions built upon SWR technology providing industry-leading density and ease-of-use. WTC delivers a differentiated solution providing lighter, smaller diameter cables compared to conventional ribbon or single-fiber loose tube solutions.

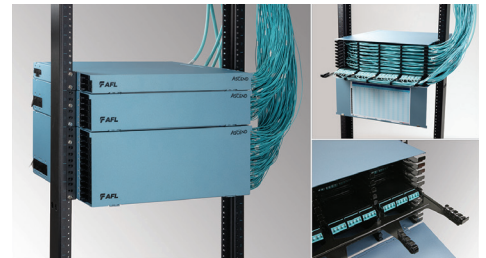
End users also need to have an eye on their connectivity infrastructure. Achieving this level of density is already a challenge and doing so in a manner which is efficient to install, maintain and reliable requires a solution approach.

AFL's new ASCEND™ High Density Connectivity Platform was developed from



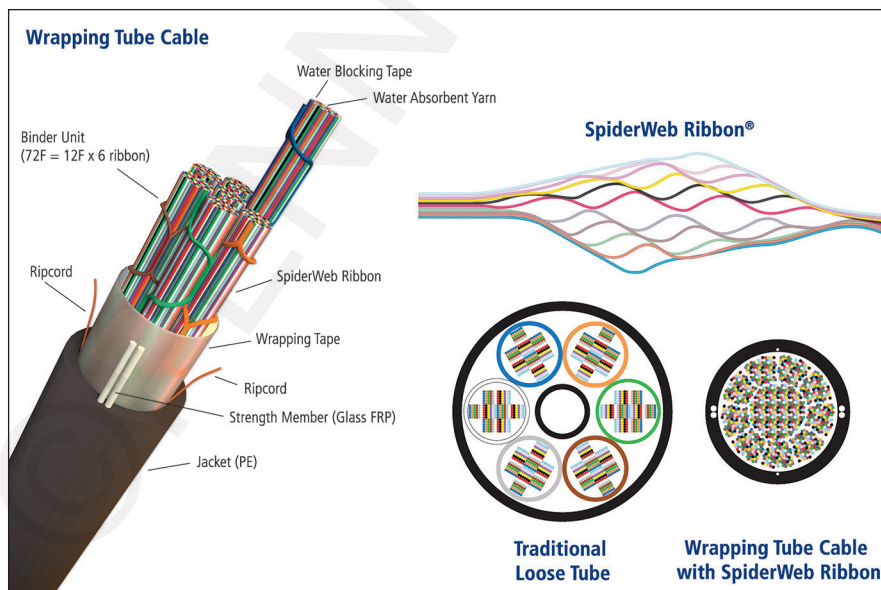
Seán Adam, AFL Vice President of Market Strategy and Innovation

the ground up with these challenges in mind. The ASCEND platform is a modular, rack mount solution designed for applications where high density is key. Beyond just delivering dense connectivity, the ASCEND solution provides a unique set of features such as enabling single person installation to reduce expense; easy reconfigurability through both the front and back of the rack to drive down maintenance time and com-



plexity; and an overall attention to detail, such as an integrated cable mounting clip which eliminates the requirement for external clamps and improves overall reliability. The platform's modular approach to accommodating patch, splice and WDM capabilities provides the critical future-proofing and flexibility needed today.

Achieving the promise of the tomorrow requires a reliable, fiber deep network infrastructure. This year marks the emergence into a new world of true connectivity.



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