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Reimbursement Guide

A practical framework for coding and justifying modern dynamic-response AFO systems

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A Practical Framework for PDE™ Reimbursement

The purpose of this guide is to provide a clear understanding of how the unique components and functional characteristics of Fabtech's PDE-integrated AFO systems—the Re-Vive™ and Re-Aktiv™—can be represented by Medicare-approved, Level II HCPCS codes. Because today's reimbursement environment is shaped by coding structures developed decades before the availability of modular dynamic-response composite AFO springs, pre-preg carbon laminations, and contemporary alignment tuning practices, this guide offers context to help clinicians interpret how modern PDE-AFO technology fits within that system.

It is important to note, there are some L codes which may be added (varus/valgus correction, pre-tibial shell, molded inner boots, etc.) per the discretion of the orthotist according to individual patient presentation. This document clarifies how Fabtech's PDE, Re-Vive™, and Re-Aktiv™ componentry and technology is represented by existing L codes and is therefore not an exhaustive list of all possible L codes which may be applied to a Re-Vive™ or Re-Aktiv™ AFO. The codes presented in this guide are suggestions; this document is not a guarantee of payment or reimbursement for the products, and clinicians are encouraged to use discretion when coding, documenting, and billing individual devices to ensure the codes utilized accurately reflect the devices provided.

The content describes device mechanics, structural characteristics, fabrication procedures, and manufacturing insights to clarify the link between the components and their recommended codes. It serves as a reference to better understand how to comprehensively justify individual codes for the Re-Vive™ and Re-Aktiv™ systems. By clarifying the coding landscape, this guide aims also to enhance clinicians' confidence in navigating reimbursement so that Fabtech's effective, durable, and trustworthy AFOs are simple to provide.

PDE™ Overview

Fabtech's Posterior Dynamic Element (PDE™) is a posteriorly mounted, variable stiffness composite spring that forms the characteristic element within Fabtech's three-part, patented modular AFO systems. The PDE spring controls lower limb motion, stores/returns energy in gait and enables clinical tuning of stiffness and alignment over time as presentation or goals evolve. The PDE spring exists in two distinct forms – Neuromuscular and Orthopedic, with engineered characteristics and indications specific to the clinical demands of each line.

Within the AFO, the PDE functions as the biomimetic energy-storing component substituting for muscle weakness and/or dysfunction:

- In swing, the spring's rigidity helps maintain toe clearance when dorsiflexors are weak.
- In stance, the spring progressively resists tibial progression (dorsiflexion) and then returns stored energy during terminal stance/pre-swing, aiding rollover and push-off.

These mechanical actions of the PDE spring achieve the four determinants of functional gait as described by Perry and Burnfield.[1]

Modularity and clinical tuning

PDE components are available in multiple stiffness categories and line specific sizes, and the PDE Alignment Shims permit adjustment in sagittal and transverse planes to optimize alignment. This modularity supports long-term device usability and incremental tuning without remaking the entire orthosis—overall saving time, reducing waste, and enhancing fit and function. Anchor plates and bolt spacing are unique to each PDE spring line as a safety measure to avoid accidental misplacement of a Neuromuscular PDE spring for an Orthopedic PDE in a PTB or offloading AFO.

Neuromuscular line specifics (Re-Vive™ AFO)

The Adult Neuromuscular PDE is available in stiffness categories 1–5 and lengths 200 mm and 250 mm, configured to address plantar flexor weakness, stance phase gait deviations, and terminal stance support for patients with neuromuscular diagnoses including but not limited to Multiple Sclerosis, Post-CVA, Post-Polio Syndrome, Cerebral Palsy, Spina Bifida, and more. The Re-Vive™ AFO is fabricated by Fabtech Systems and integrates the Neuromuscular PDE with a variable-stiffness composite footplate.

Orthopedic line (Re-Aktiv™ AFO)

The Orthopedic PDE and Re-Aktiv™ constructions prioritize immobilization of painful or unstable joints, rigid composite footplate, offloading strategies (e.g., PTB cuff), and robust PDE springs rated for offloading—while still delivering energy-return properties. The Re-Aktiv™ AFO is fabricated by Fabtech Systems with the Orthopedic PDE spring with a rigid pre-preg footplate and PTB cuff with Revo closure system. Primary indications for the Re-Aktiv™ AFO are foot or ankle pain in weight-bearing or with dorsiflexion. This presentation is commonly associated with post-traumatic fractures, ankle arthritis, pilon fractures, and similar conditions.

It is important to keep in mind payer-specific pre-requisites for custom, ambulatory AFOs. Medicare has determined the following must be documented for a custom ambulatory AFO to be considered medically necessary:

1 Perry, Jacquelin, and Judith M. Burnfield. Normal and Pathological Function SECOND EDITION. p. 43.

"Ankle-foot orthoses (AFO) described by codes L1900, L1902, L1904, L1906, L1907, L1910, L1920, L1930, L1932, L1933, L1940, L1945, L1950, L1951, L1952, L1960, L1970, L1971, L1980, L1990, L2106, L2108, L2112, L2114, L2116, L4350, L4360, L4361, L4386, L4387 and L4631 are covered for ambulatory beneficiaries with weakness or deformity of the foot and ankle, who:

1. Require stabilization for medical reasons, and,
2. Have the potential to benefit functionally.

AFOs and KAFOs that are custom-fabricated are covered for ambulatory beneficiaries when the basic coverage criteria listed above and one of the following criteria are met:

1. The beneficiary could not be fit with a prefabricated AFO; or,
2. The condition necessitating the orthosis is expected to be permanent or of longstanding duration (more than 6 months); or,
3. There is a need to control the knee, ankle or foot in more than one plane; or,
4. The beneficiary has a documented neurological, circulatory, or orthopedic status that requires custom fabricating to prevent tissue injury; or,
5. The beneficiary has a healing fracture which lacks normal anatomical integrity or anthropometric proportions.

If a custom fabricated orthosis is provided but basic coverage criteria above and the additional criteria 1-5 for a custom fabricated orthosis are not met, the custom fabricated orthosis will be denied as not reasonable and necessary."[2]

[2] AFO/KAFO Local Coverage Determination, https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=33686

Re-Vive™ AFO - Components to Codes

Base Code:

Custom AFO → L1970

Ankle foot orthosis, plastic with ankle joint, custom fabricated

The Re-Vive™ is a fully custom-molded AFO intended to address ambulation dysfunction secondary to lower extremity weakness or musculoskeletal deficit. Research has demonstrated the efficacy of AFOs in improving gait in calf muscle weakness and that stiffness influences energy cost and push-off capacity.[3, 4] Because the Neuromuscular PDE spring used in the Re-Vive™ AFO is a deflecting spring element—one that is specifically designed to flex and control ankle motion in the sagittal plane—it does not function like a rigid strut or static support to resist compression. The Neuromuscular PDE spring is, in fact, not designed for compression or offloading, this is the function of the Orthopedic PDE. The spring includes a built-in distal deflection zone that behaves like a mechanical hinge, allowing controlled plantarflexion and dorsiflexion rather than simply resisting movement.

The Re-Vive™ AFO's functional behavior aligns with L1970, which describes an ankle–foot orthosis that incorporates an ankle joint mechanism enabling motion.[5]

Addition Codes:

Neuromuscular PDE Spring → L2220

Addition to lower extremity, dorsiflexion and plantar flexion assist/resist, each joint

The Neuromuscular PDE spring functions cyclically: first resisting plantarflexion in both swing and initial contact/loading response, then resisting dorsiflexion through stance, and finally assisting plantarflexion in terminal stance and pre-swing before repeating the process in the next step taken. Evidence shows increases in both dorsiflexion and plantarflexion moments and improved ankle power generation with similar carbon fiber spring orthoses.[6] As required by the L2220 description, the Neuromuscular PDE springs may be swapped post-delivery to effectively change the allowed range of motion as the patient's needs change over time.[5] Independent from allowed ROM, the resting alignment of the device may also be adjusted post-delivery by nature of the Neuromuscular PDE

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[3] Waterval, N., van der Krogt, M. M., Veerkamp, K., et al. "Description of Orthotic Properties and Effects Evaluation of Ankle-Foot Orthoses in Non-Spastic Calf Muscle Weakness." *Journal of Rehabilitation Medicine*. 2020. https://doi.org/10.2340/16501977-2642

[4] Bregman, D. J. J., van der Krogt, M. M., de Groot, V., et al. "The Effect of Ankle Foot Orthosis Stiffness on the Energy Cost of Walking: A Simulation Study." *Clinical Biomechanics*.2011;26(9):955–961. https://doi.org/10.1016/j.clinbiomech.2011.05.007

[5] "Ankle-Foot/Knee-Ankle-Foot Orthoses - Policy Article A52457." Medicare Coverage Database, Centers for Medicare & Medicaid Services, https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleId=52457. Accessed 30 Mar. 2026.

[6] Bartonek, Åsa, et al. "Effects of Carbon Fibre Spring Orthoses on Gait in Ambulatory Children with Motor Disorders and Plantarflexor Weakness." Developmental Medicine & Child Neurology, vol. 49, no. 8, 2007, pp. 615–20. Wiley Online Library, https://doi.org/10.1111/j.1469-8749.2007.00615.x.

spring. The mechanical behavior of the Neuromuscular PDE spring is designed to assist and resist plantar and dorsiflexion throughout the gait cycle as the L2220 describes.

Neuromuscular PDE Anchors→ L2780 x2

Addition to lower extremity orthosis, non-corrosive finish, per bar

The Neuromuscular PDE anchors are essential components in any AFO that uses PDE springs. These metal anchors affix the critical component, the PDE spring, to the custom footplate and cuff of the AFO. The PDE anchors are coated in a non-corrosive finish to protect against sweat and environmental corrosives (e.g., sidewalk salt, household cleaning agents, etc.). Additionally, the non-corrosive finish applied to the aluminum alloy anchors prevents galvanic corrosion, a type of corrosion in which carbon fiber, a conductive substance, when in contact with metals will causing the metal to degrade via a chemical interaction.[7,8] A non-corrosive coating on the anchor plates is necessary to mitigate the corrosion between materials so the strength-to-weight and other mechanical benefits of the materials still may be realized.

Re-Vive™ Pre-preg Carbon Footplate + Neuromuscular PDE Spring → L2755 x2

Addition to lower extremity orthosis, high strength, lightweight material, all hybrid lamination/prepreg composite, per segment, for custom fabricated orthosis only

Carbon fiber laminated components—such as the Re-Vive™ composite footplate and Neuromuscular PDE Spring—provide high stiffness at low weight, supporting biomechanical goals while minimizing energy cost. Composite materials help maintain structural responsiveness and longevity. These characteristics are consistent with the composite material addition described under L2755. The code is quantified by anatomical segment (foot, leg, thigh, etc.) so, although there are technically three distinct carbon Re-Vive™ components (footplate, PDE spring, and the cuff), the components only encompass two anatomical segments, the foot and leg, so the final recommended quantity is two.

Re-Vive™ Rocker Footplate → L2232

Addition to lower extremity orthosis, rocker bottom for total contact ankle foot orthosis (AFO), for custom fabricated orthosis

The toe rocker of the Re-Vive™ footplate facilitates rollover mechanics by geometrically simulating the third and fourth rockers. The rockers may be variable stiffness, according to patient presentation, but are always present to promote forward progression. The rocker is initially identified in the cast taken by the orthotist, then modified into the model to align with the individual's specific line of progression and finally reproduced in the standalone device out of a combination of pre-preg laminates to ensure appropriate kinematics. The total-contact nature of the footplate and cuff is first recognized in the casting procedures, then rectified in the modifications of the model, and

[7] Liu, Junyi, et al. "Galvanic Corrosion Protection of Al-Alloy in Contact with Carbon Fibre Reinforced Polymer through Plasma Electrolytic Oxidation Treatment." Scientific Reports, vol. 12, no. 1, Mar. 2022, p. 4532. DOI.org (Crossref), https://doi.org/10.1038/s41598-022-08727-7.

[8] Srinivasan, Raghu, et al. "Development of Guidelines to Attenuate Galvanic Corrosion between Mechanically-Coupled Aluminum and Carbon-Fiber Reinforced Epoxy Composites Using Insulation Layers." Journal of The Electrochemical Society, vol. 162, no. 10, 2015, pp. C545–54. DOI.org (Crossref), https://doi.org/10.1149/2.0611510jes.

confirmed at deliver. Total-contact ensures appropriate control of the foot and ankle without void space which would compromise fit and posture correction.

Re-Vive™ Soft Interface Padding → L2820

Addition to lower extremity orthosis, soft interface for molded plastic, below knee section

All Re-Vive™ AFOs by default are lined with foam on the footplate and cuff regions. Soft interfaces added to these regions of the AFO help protect bony anatomy (malleoli, tibial crest, etc.) and other areas vulnerable to pressure sensitivity, scarring, or mild edema. Evidence highlights the link between sustained pressure and skin breakdown in addition to identifying that protective, custom-molded interface materials help prevent pressure injuries.[9,10]

Re-Vive™ Reinforced Footplate Stirrup Region → L2250

Addition to lower extremity, foot plate, molded to patient model, stirrup attachment

The Re-Vive™ footplate is reinforced with a proprietary pre-preg carbon layup protocol established by Fabtech Systems. The protocol involves several unique orientations of the prepreg carbon sheets in repeating layers to selectively enhance rigidity where required and minimize bulk elsewhere. This reinforcement pattern both ensures the PDE anchor maintains proper integration with the PDE anchor and spring under loading and simultaneously promotes engagement of the PDE spring by preventing fish-mouthing of the footplate. This enhances the longevity and functional performance of the device. *The L2250 applies only to Re-Vive™ AFO footplates fabricated with Fabtech System's proprietary pre-preg layup procedure or thermoplastic AFOs with Neuromuscular PDE spring utilizing the TPAK-2 anchor kit with ProComp reinforcement stirrup.

[9] Mervis, J. S., & Phillips, T. J. "Pressure Ulcers: Pathophysiology, Epidemiology, Risk Factors, and Presentation." *Journal of the American Academy of Dermatology.* 2019;81(4):881–890.

[10] Brienza, D. M., Karg, P. E., Geyer, M. J., et al. "A Randomized Clinical Trial on Preventing Pressure Ulcers with Wheelchair Seat Cushions." *Journal of the American Geriatrics Society.*2010;58(12):2308–2314. https://doi.org/10.1111/j.1532-5415.2010.03168.x

Re-Aktiv™ AFO - Components to Codes

Base Code:

Orthopedic PDE Spring + Rigid Composite Footplate → L1960

Ankle foot orthosis, posterior solid ankle, plastic, custom-fabricated

The Orthopedic PDE spring works in conjunction with a rigid composite custom Re-Aktiv™ footplate to create a solid-ankle AFO in order to achieve the device's primary goal of reduced pain in the foot and/or ankle. Literature supports the role of rigid AFO designs for immobilizing painful joints and modern composite materials provide the required structural support to do so.[11]

Addition Codes:

Re-Aktiv™ PTB Off-Loading Cuff → L2350

Addition to lower extremity, prosthetic type, (BK) socket, molded to patient model, (used for 'PTB' 'AFO' orthoses)

The Re-Aktiv™ cuff is casted in a separate stage from the footplate section according to specific Fabtech protocol and is modified much like a transtibial prosthetic socket. It is designed to redistribute load proximally to reduce pain inn sensitive or unstable distal structures in the foot and ankle. Orthotic literature identifies PTB configurations as a method of reducing weightbearing loads through compromised foot/ankle complexes.[11] Donning strategies for the Re-Aktiv™ also consider maximum efficacy of the offloading cuff. These design, outcome, and use characteristics correspond to the prosthetic-type PTB socket addition described under L2350.

Orthopedic PDE Anchors→ L2780 x2

Addition to lower extremity orthosis, non-corrosive finish, per bar

The Orthopedic PDE anchors are essential construction components in any AFO that uses PDE springs. These metal anchors affix the critical component, the PDE spring, to the custom footplate and cuff of the AFO. The PDE anchors are coated in a non-corrosive finish to protect against sweat and environmental corrosives (e.g., sidewalk salt, household cleaning solvents, etc.). Additionally, the non-corrosive finish applied to the aluminum alloy anchors prevents galvanic corrosion, a type of corrosion in which carbon fiber, a conductive substance, when in contact with

[11] Orthotics and Prosthetics in Rehabilitation. 3rd ed. St. Louis, MO: Elsevier; pp. 225–226.

metals will causing the metal to degrade via a chemical interaction.[12,13] A non-corrosive coating on the anchor plates is necessary to mitigate the corrosion between materials so the strength-to-weight and other mechanical benefits of the materials still may be realized.

Orthopedic PDE Spring + Re-Aktiv™ Pre-preg Carbon Footplate → L2755 x2

Addition to lower extremity orthosis, high strength, lightweight material, all hybrid lamination/prepreg composite, per segment, for custom fabricated orthosis only

High strength composite elements—including the Orthopedic PDE Spring and the Re-Aktiv™ pre-preg carbon footplate—provide stiffness, durability, and controlled energy return needed to limit painful motion while supporting stance phase stability. The Re-Aktiv™ footplate layup is distinct and far more rigid than the Re-Vive™, acknowledging the different patient population need for minimal force translation from the forefoot through the compromised mid/rearfoot and/or ankle joint(s). Composite materials are noted for their strength to weight efficiency which is critical given the strength and stiffness requirements of immobilizing a foot and ankle complex without over-bulking the device to the point of impractical use. The code is quantified by anatomical segment (foot, ankle, thigh, etc.) so, although there are technically three distinct carbon Re-Vive™ components (footplate, PDE spring, and the cuff), the components only encompass two anatomical segments, the foot and leg, so the final quantity recommended is two.

Re-Aktiv™ Rocker Footplate → L2232

Addition to lower extremity orthosis, rocker bottom for total contact ankle foot orthosis (AFO), for custom fabricated orthosis

The toe rocker of the Re-Aktiv™ footplate facilitates rollover mechanics by geometrically simulating the third and fourth rockers. The rocker is generally stiff to minimize force transfer through the patient's anatomy, and the geometry of the rocker is individually calibrated to promote forward progression at appropriate timing. The rocker is initially identified in the cast taken by the orthotist, then modified into the model to align with the individual's specific line of progression and finally reproduced in the standalone device out of a combination of pre-preg laminates to ensure appropriate kinematics. The total-contact footplates ensure appropriate control of the foot and ankle without void space which would compromise fit, posture correction, and pain reduction outcomes.

Re-Aktiv™ Soft Interface Padding → L2820

Addition to lower extremity orthosis, soft interface for molded plastic, below knee section

All Re-Aktiv™ AFOs by default are lined with foam on the footplate and anterior PTB cuff regions. Soft interfaces added to the pretibial and footplate regions of the Re-Aktiv™ AFO help protect bony anatomy (malleoli, tibial crest, etc.) and other areas vulnerable to pressure sensitivity, scarring, or mild edema. Evidence highlights the link between

[12] Liu, Junyi, et al. "Galvanic Corrosion Protection of Al-Alloy in Contact with Carbon Fibre Reinforced Polymer through Plasma Electrolytic Oxidation Treatment." Scientific Reports, vol. 12, no. 1, Mar. 2022, p. 4532. DOI.org (Crossref), https://doi.org/10.1038/s41598-022-08727-7.

[13] Srinivasan, Raghu, et al. "Development of Guidelines to Attenuate Galvanic Corrosion between Mechanically-Coupled Aluminum and Carbon-Fiber Reinforced Epoxy Composites Using Insulation Layers." Journal of The Electrochemical Society, vol. 162, no. 10, 2015, pp. C545–54. DOI.org (Crossref), https://doi.org/10.1149/2.0611510jes.

sustained pressure and skin breakdown in addition to identifying that protective, custom-molded interface materials help prevent pressure injuries.[14,15]

Re-Aktiv™ Prepreg Stirrup Reinforcement → L2250

Addition to lower extremity, foot plate, molded to patient model, stirrup attachment

The Re-Aktiv™ footplate is reinforced with a proprietary pre-preg carbon layup protocol established by Fabtech Systems. The protocol involves several unique orientations of the prepreg sheets in repeating layers to selectively enhance rigidity where required, and minimize bulk elsewhere. This reinforcement pattern both ensures the PDE anchor maintains proper integration with the PDE anchor and spring under loading and simultaneously minimizes ankle motion by preventing deflection of the footplate. This enhances the longevity and functional performance of the device. *The L2250 applies only to Re-Aktiv™ footplates fabricated with Fabtech System's proprietary pre-preg layup procedure.

RevoFit Adjustable Closure → L2999

Lower extremity orthoses, not otherwise specified

Unlike prosthetic applications which require precise volume adjustments to ensure distal offloading, the Re-Aktiv™ system cannot easily utilize a system like prosthetic socks to achieve such volume changes. Instead, the RevoFit closure allows granular adjustment for limb volume changes or comfort needs in orthopedic users. It simultaneously creates a robust structural junction between anterior and posterior halves of the Re-Aktiv™ PTB cuff, maintaining the internal volume of the system with an inelastic and non-fatiguing link, unlike Velcro straps. As the technology is not directly described by existing HCPCS language, it is categorized under L2999. See Click Medical billing and reimbursement resources for additional information.

[14] Mervis, J. S., & Phillips, T. J. "Pressure Ulcers: Pathophysiology, Epidemiology, Risk Factors, and Presentation." *Journal of the American Academy of Dermatology.* 2019;81(4):881–890.

[15] Brienza, D. M., Karg, P. E., Geyer, M. J., et al. "A Randomized Clinical Trial on Preventing Pressure Ulcers with Wheelchair Seat Cushions." *Journal of the American Geriatrics Society.*2010;58(12):2308–2314. https://doi.org/10.1111/j.1532-5415.2010.03168.x

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