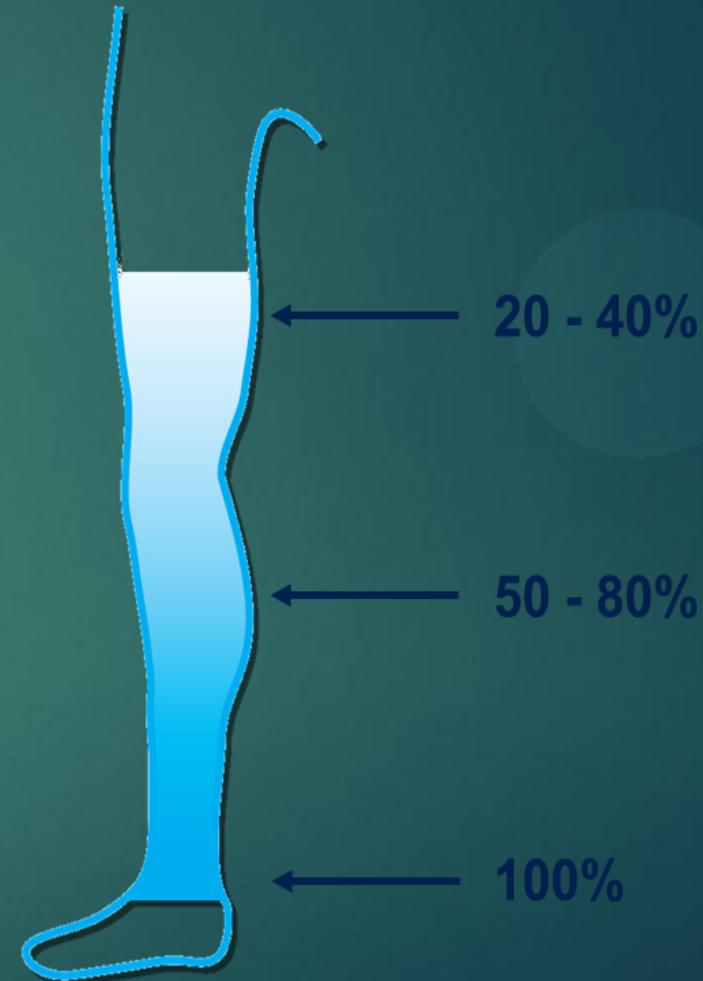


# American Classification of Compression Stockings

TERRI MORRISON, RN, BS

Graduated Compression socks and hosiery have been a proven prescription in the prevention, management and treatment of the many stages of venous insufficiency.

The external graduated compression acts as a layer of muscle by gently squeezing the stretched vein walls together, allowing the valves to close and function properly. The cavity of the vein is reduced, thereby restoring blood flow to a normal state and aiding overall circulation.



# American system:

Graduated compression socks or stockings come in strengths: 8-10 mmHg, 15-20mmHg, 20-30mmHg, 25-35 mmHg for diabetics, 30-40mmHg, 40-50 mmHg and higher. They are prescribed by medical professionals and sold online, in DME (durable medical stores), and in some medical offices and hospitals.

Patients are generally taught: if they have severe symptoms, leg ulcers, or post vein procedures "they may be prescribed a stronger strength" than for their daily wear.

Many still think you mean ted socks!



Sound Easy?

Not Really !

**“ 50 Shades of Grey ”**

# Compression Classes

## US Compression Ranges

There is no known medical science supporting the compression ranges used in the US for seamless compression stockings. Early US providers of compression stockings classified their garments in these compression ranges. Over time, these ranges became the accepted norm in the US market.

### Pressure in mmHg



**JOBST**

UltraSheer

30-40 mmHg\*

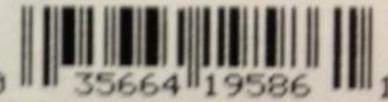
Cal.No.: 119586

LOT 022340552

Waist CT

Large

Anthracite



(01)00035664195861 (20)01 (10)022340552

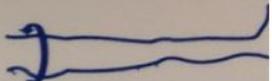


JOBST UltraSheer favorisent un soulagement permanent des jambes fatiguées, de la douleur et l'inconfort associé aux varices sévères, aux ulcères veineux et aux oedèmes, même après une sclérothérapie ou une chirurgie des veines.

JOBST UltraSheer présentent une transparence exceptionnelle et une texture légère, idéal pour les activités formelles ou les tenues élégantes.

- 1 Une maille fine pour une transparence extrême
- 2 Sensation de douceur
- 3 JOBST *Advanced comfort*™, un mélange unique de fils et de finitions gardant vos pieds au sec, frais et confortables
- 4 Culotte ultra confortable, bande large à la taille
- 5 La compression graduelle de JOBST améliore le flux sanguin et aide à prévenir les gonflements.

Pour votre confort, votre santé et votre élégance ... vos jambes méritent JOBST!

	<b>b</b> 	<b>g</b> 	<b>h</b> 
<b>S</b>	7"-8 <sup>1</sup> / <sub>4</sub> " (18-21cm)	15 <sup>3</sup> / <sub>4</sub> "-24 <sup>3</sup> / <sub>8</sub> " (40-62cm)	28"-46" (71-117cm)
<b>M</b>	8 <sup>3</sup> / <sub>8</sub> "-9 <sup>7</sup> / <sub>8</sub> " (21-25cm)	18 <sup>1</sup> / <sub>8</sub> "-27 <sup>1</sup> / <sub>2</sub> " (46-70cm)	30"-50" (76-127cm)
<b>L</b>	10"-11 <sup>3</sup> / <sub>8</sub> " (25-29cm)	21 <sup>1</sup> / <sub>4</sub> "-30 <sup>3</sup> / <sub>4</sub> " (54-78cm)	32"-54" (81-137cm)
<b>XL</b>	11 <sup>1</sup> / <sub>2</sub> "-13" (29-33cm)	23 <sup>5</sup> / <sub>8</sub> "-32" (60-81cm)	40"-65" (102-166cm)

775P L2 W99

SIZE: L2

30-40 mmHg

black  
negro



Model	Type	Size	Color
2582 SHORT	AT	IV	BLACK

HIGH ELASTIC BODY PART  
PANTY HOSE

ccl2 21 6 48895 82899 8

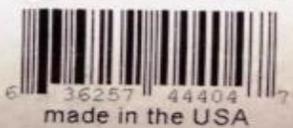


**m** mediven sheer&soft natural panty open toe 44404

IV 30-40

J24 480-07-01 208916/1 - 11/118

made in the USA



**JOBST**  
UltraSheer  
30-40 mmHg\*

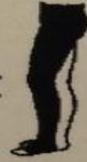
Cat. No.: 119586 LOT 022340552

Waist CT Large Anthracite

(01)00035664195861(20)01(10)022340552



mediven  
sheer&soft  
natural



panty  
open toe **44404**  
IV 30-40



J24

480-07-01

208916/1

Circumference	I	II	III	IV	V	VI
Panty & Thigh	15"-22¼" 38-56.5cm	16¼"-24¼" 41.5-61.5cm	17½"-26¼" 44.5-66.5cm	18¾"-28¼" 47.5-72cm	20"-30¼" 51-77cm	21¼"-32¼" 54-82cm
Calf	10¼"-13¼" 26-33.5cm	11"-14½" 28-37cm	11¾"-15¾" 30-40cm	12½"-17" 32-43cm	13¼"-18¼" 33.5-46.5cm	14"-19½" 35.5-49.5cm
Ankle	7"-7¾" 18-19.5cm	8"-8¾" 20.5-22cm	9"-9¾" 23-25cm	10"-10¾" 25.5-27.5cm	11"-11¾" 28-30cm	12"-13" 30.5-33cm

Length Standard: 28" (71 cm) and over Petite: Less than 28" (71 cm)

Technically proven compression therapy

773P L2 W99

SIZE: L2

30-40 mmHg



black  
negro

noir

01854



SIGVARIS® PANTYHOSE/COLLANTS/PANTIMEDIA

MEDICAL COMPRESSION STOCKINGS

Recommended by Doctors in over 70 countries

BAS DE COMPRESSION MÉDICAUX

Recommandé par les Médecins dans plus de 70 pays

MEDIAS MÉDICAS DE COMPRESIÓN

Recomendado por Doctores en 70 países

	SMALL/PETIT/PEQUEÑO				MEDIUM/MOYEN/MEDIANO				LARGE/GRAND/GRANDE			
<b>1</b>	7 - 8 1/2" (18-21.5 cm)				8 1/2 - 10" (21.5-25.5 cm)				10 - 11 1/2" (25.5-29 cm)			
<b>2</b>	AVG Moyen/Normal 11 - 13" (28-33 cm)		FULL Ample/Extra Grande 13 - 15" (33-38 cm)		AVG Moyen/Normal 13 - 15 1/2" (33-39.5 cm)		FULL Ample/Extra Grande 15 1/2 - 18" (39.5-45.5 cm)		AVG Moyen/Normal 15 - 18" (38-45.5 cm)		FULL Ample/Extra Grande 18 - 21" (45.5-53.5 cm)	
<b>3</b>	AVG Moyen/Normal 16 - 19 1/2" (40.5-49.5 cm)		FULL Ample/Extra Grande 19 1/2 - 23" (49.5-58.5 cm)		AVG Moyen/Normal 19 - 23" (48.5-58.5 cm)		FULL Ample/Extra Grande 23 - 27" (58.5-68.5 cm)		AVG Moyen/Normal 23 - 27 1/2" (58.5-70 cm)		FULL Ample/Extra Grande 27 1/2 - 32" (70-81.5 cm)	
<b>4</b>	SHORT Court/Corto up to 28" up to 71 cm	LONG Long/Largo over 28" over 71 cm	SHORT Court/Corto up to 28" up to 71 cm	LONG Long/Largo over 28" over 71 cm	SHORT Court/Corto up to 28" up to 71 cm	LONG Long/Largo over 28" over 71 cm	SHORT Court/Corto up to 28" up to 71 cm	LONG Long/Largo over 28" over 71 cm	SHORT Court/Corto up to 28" up to 71 cm	LONG Long/Largo over 28" over 71 cm	SHORT Court/Corto up to 28" up to 71 cm	LONG Long/Largo over 28" over 71 cm
<b>Size</b> Taille/Medida	<b>S1</b>	<b>S2</b>	<b>S3</b>	<b>S4</b>	<b>M1</b>	<b>M2</b>	<b>M3</b>	<b>M4</b>	<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>L4</b>

way 74 S  
.A.

min St-Francois  
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Made in USA  
Fabriqué aux États Unis  
Hecho en los Estados Unidos

56% Nylon  
44% Spandex

**GANZON**  
Improving quality of life

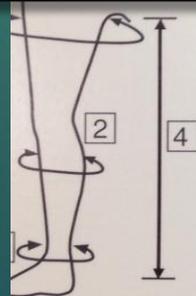
# No US Government Standards for Compression

“Good guys do rigorous testing”

Quality companies test to guarantee the level of compression stated on the box and a premium product that will fit the measurements so stated on each box. Key players follow RAL design principles and standards.

③ JOBST Advanced comfort™, un mélange unique de fils et de mailles gardant vos pieds au sec, frais et confortables  
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<b>Size</b> Taille/Medida	<b>S1</b>	<b>S2</b>	<b>S3</b>	<b>S4</b>	<b>M1</b>	<b>M2</b>	<b>M3</b>	<b>M4</b>	<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>L4</b>

SIGVARIS INC., 1119 Highway 74 S  
Atlanta, GA 30269 U.S.A.

SIGVARIS CORP., 5653 Chemin St-Francois  
St-Jovite, Quebec, Canada H4S 1W6

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Fabriqué aux États Unis  
Hecho en los Estados Unidos

56% Nylon  
44% Spandex

**GANZON**  
Improving quality of life

# SIZING

- ▶ Sigvaris purchased 3D renderings of 21000 legs to be sure the sizing fits TODAY'S population...Couple that with new technology and new yarns to provide confidence in fitting the masses.

Sigvaris "has a testing method compatible to the ITF method which provides curves and values for better analysis of compression delivery."

The USA FDA Standard Class II is related to the medical device, not class II compression- this requirement is “ to show their effect on preventing blood pooling in the legs.”

The FDA classifies compression stockings for general medical purposes as a class I device exempt from FDA 510k pre-market notification requirements.



In the USA, there is no independent, credible lab that validates the compression provided by stockings. Some labs offer compression testing, however their methods and procedures have not been validated by the compression garment industry.

Graduated compression profiles vary from manufacturer to manufacturer. There is no reported consensus in the US on a proper compression profile.

Standards rest in the hands of registered compression stocking fitters and the physician or health care professionals who prescribe them.

Lack of standards has resulted in many importers and private labels with the end result of a market with a wide range of price points and stockings with varying levels of medical efficacy.

Strong Compression vs.  
30-40 mmHg vs.

Lightweight or Moderate?  
20 mmHg



# High prevalence of class zero stockings:

Lower cost of garments in this compression class

▶ Milder compression leads to easier donning and doffing

“Compression therapy is a treatment modality which is several thousands years old. Only during the last years, its clinical efficacy in several indications has been proved by randomized controlled trials.”

Hugo Partsch

“In a study based on the assessment of independent observers Kern et al have demonstrated that compression stockings in a range of 20-30 mmHg worn for three weeks are able to improve the cosmetic outcome after sclerotherapy of spider veins on the lateral thigh .....” Kern study..



But the question is: What type of compression ?

The point is obvious when you order Class 2, 30-40 mmHg MES on varying body types, sizes, young, old, skinny feet or large ankles, etc and wonder why compliance is an issue.

The range of a 20-29 cm ankle in the same 30-40 mmHg prescription by the provider is going to cause a “wide variation in compression” and probably cause pain in the patient with skinny feet, due to simple mechanical principles.

# “ Compression in venous leg ulcers A consensus document: ”

▶ A WORLD UNION OF WOUND HEALING SOCIETIES' INITIATIVE

“Patients whose underlying CVI cannot be surgically corrected are likely to require monitored lifelong compression to prevent ulcer recurrence. This is often achieved using hosiery that gives a mild to moderate pressure of at least 18–25mmHg, and preferably up to 35mmHg if tolerated.”

“Mild to moderate pressure?  
With which types of  
stockings, which fabrics?”

What is the dynamic stiffness  
index?

Table IV. Medical compression stockings versus bandages. with high stiffness

	Medical compression stockings	Bandages with high stiffness
"Moderate" pressure (mm Hg)	20-30	20-40
"Strong" pressure	30-45	40-60
Main indications	Maintenance therapy following ulcers, DVT, postthrombotic syndrome,lymphedema -	Active treatment in venous ulcers, phlebitis, DVT, lymphedema. After vein-sugery and endovenous procedures
Worn	Day-time	Day and night
Changed	Every day	Every several days
Practicability	Mobile patient can do it	Trained staff needed
Action during walking	Working pressure is only slightly higher than resting pressure	High pressure peaks during walking, strong massaging effect
Main effects	Edema reduction, improvement of dermal blood flow	Narrowing of veins and hemodynamic effects



Hundreds line up for  
vein care and  
compression stockings



# Manufacturers need support from thought leaders around the globe

Boston, USA September 8-13, we can continue to repair inconsistency in compression standards and classification issues.

HOW MUCH, HOW HIGH, WHAT DSI,  
HOW LONG ??????

# Excited About Compression Guidelines, Teaching



THANK YOU,  
ICC

