

# Beef yield guide

Animal to carcase, to primals, to muscles

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### Introduction

The industry aim is to add value, use every part of the carcase and minimise wastage. This brochure has been produced to help people working with beef to get a basic understanding about the yield figures from farm to plate. Traditionally, the carcase is divided into hindquarter and forequarter primal cuts. Each of these primal cuts is then cut into a range of individual cuts and muscles, from which weights have been taken, to calculate the overall yield.

#### Dick van Leeuwen

AHDB Business Development Manager and Master Butcher

# Processing the beef carcase, from farm to plate

### *Animal* = 100%



- KKCF or can go as an edible co-product to be rendered for human consumption, e.g. baking and frying, petfood, soap manufacture, pharmaceuticals or biofuel.
- 2. These products require further processing before they are fit for human consumption.
- 3. See Regulation (EC) No 1069/2009 and gov.uk/dealing-with-animal-by-products.

### Waste/offal/by-products = 47%

Product	Figures from a from a 600kg steer of average fatness R4L		
rioddet	kg	% of carcase weight	% of liveweight
	Hid	е	
Hide	42.49	15.07	7.08
Fat can b	e used dire	ctly with the meat <sup>1</sup>	
Lung fat	1.57	0.56	0.26
Caul fat	14.54	5.16	2.42
KKCF	11.18	3.96	1.86
Cod fat	4.49	1.59	0.75
There is normally	a home ma	arket for all these p	roducts
Skirt	1.23	0.44	0.21
Tail	1.12	0.40	0.19
Kidneys	1.12	0.40	0.19
Heart	2.23	0.79	0.37
Liver	7.85	2.78	1.31
Tongue incl trimmings	2.24	0.79	0.37
Head & cheek meat incl. trimmings	2.12	0.75	0.35
Lips	1.12	0.40	0.19
	Edible co p	products <sup>2</sup>	
Stomachs	15.65	5.55	2.61
Feet	11.18	3.96	1.86
Fit	for human o	consumption	
Lungs	3.58	1.27	0.60
Trachea (weasand) & trim	1.11	0.39	0.19
Pizzle & testicles	1.32	0.47	0.22
Oesophagus	0.22	0.08	0.04
Sweetbreads (thymus)	0.34	0.12	0.06
	Othe	er <sup>3</sup>	
Spleen & pancreas	1.27	0.45	0.21
Gall bladder	0.54	0.19	0.09
Ears	1.26	0.45	0.21
Mandible	1.55	0.55	0.26
Remainder	7.27	2.58	1.21
Blood	20.13	7.14	3.36
Gut & intestinal contents	86.00	30.50	14.33
Remainder head: skull, tonsils, brain, eyes	6.91	2.45	1.15
Spinal cord	0.18	0.06	0.03
Intestinal fat	13.42	4.76	2.24
Intestines incl. fill	16.77	5.95	2.80
Total	282.00	100.00	47.00

Carcase = 53%



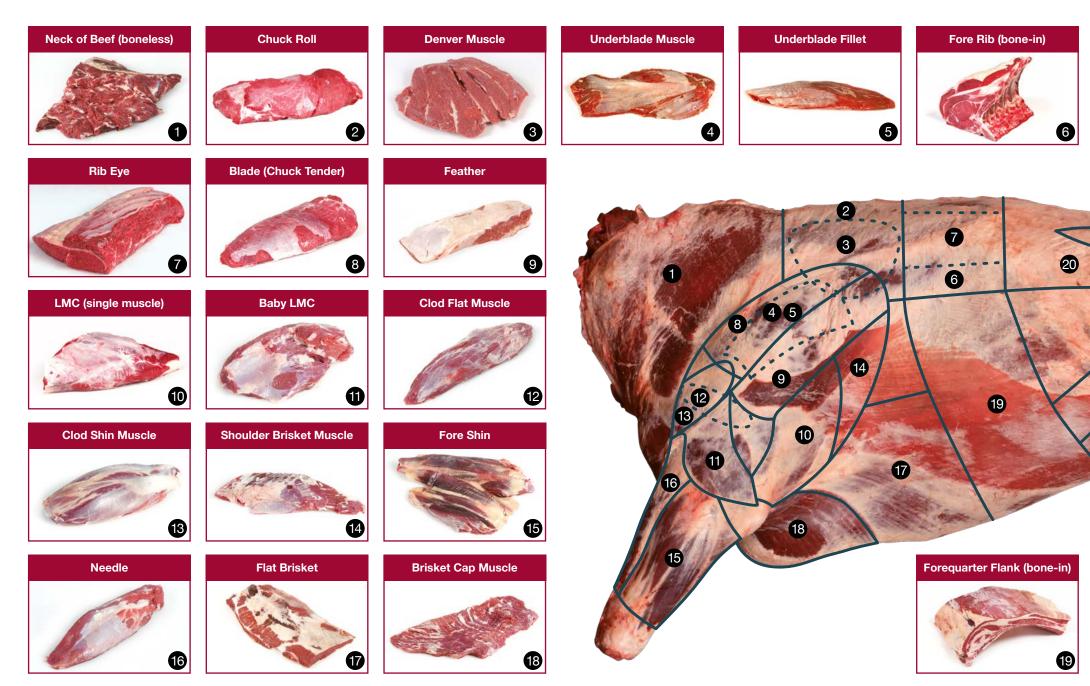
Bone/fat/drip loss = 13%



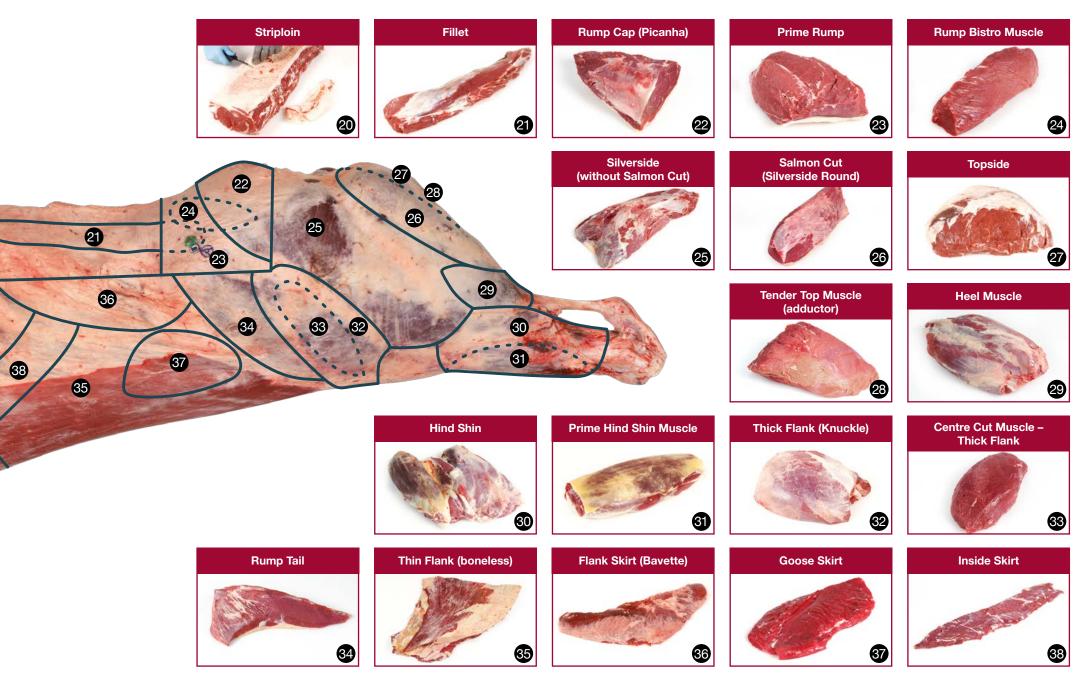
Edible meat = 40%



# Forequarter primal cuts



# Hindquarter primal cuts



# Beef carcase classification

Carcase assessment addresses conformation and fat. Fat cover is scored on a 1-5 scale. Conformation is assessed from E to P. Combining scores for conformation and fat determines the markets which cattle suit.

**FAT CLASS** 

Increasing fatness

Fat is determined by visual assessment of external fat cover. There are five main classes. Classes 4 and 5 are subdivided into L (leaner) and H (fatter)

The Quality Standard Mark Scheme stipulates specific carcase classifications for beef. Fat Class 2-4H, Conformation E-O+, the optimum classification for better meat yield (see note on right).

Carcases within the following parameters can carry the Quality Standard Mark.

- Females under the age of 36 months are acceptable. They must not have been used for breeding or be in calf, they must not be pregnant
- Steers under the age of 36 months are acceptable
- Carcases must have a fat class of between 2-4H and have a conformation of E-O+
- For qualifying livestock 30 months or under: Maturation of 7 days is required on primals used for frying, roasting and grilling (from slaughter to the final consumer)
- For qualifying livestock aged between 30-36 months: Maturation of 14 days is required on primals used for frying, roasting and grilling (from slaughter to the final consumer). Alternatively, one of the post-slaughter processes to enhance tenderness as outlined in 'AHDB Beef & Lamb Guidance to Meat Quality' can be used, ie, Hip bone suspension or electrical stimulation
- Bulls must be no older than 16 months at slaughter. Primals used for frying, roasting and grilling must be subject to a minimum 14 days maturation (from slaughter to the final consumer)



Improving conformation

Conformation is determined by a visual appraisal of shape, taking into account carcase profile and fullness of legs. No adjustment is made for the influence of fat on overall shape.

### Neck of Beef (boneless)

#### Code: Chuck B033



**Description:** The neck is removed by a straight cut parallel to the first rib and through the junction of the 7th cervical and 1st thoracic vertebrae.

Weight	3.92 kg
Percentage of carcase	2.59%

### **Chuck Roll**

#### Code: Chuck B002



**Description:** The chuck roll is a versatile muscle and can be used for a slow cooked roast, steaks or dice.

Weight	7.19 kg
Percentage of carcase	4.75%

#### Fore Rib bone-in

#### Code: Forerib B001



**Description:** The fore rib contains ribs 7, 8, 9 and 10 counting from the neck upwards. Maximum 60 mm tail. Maximum fat thickness 10 mm.

Weight	8.23 kg
Percentage of carcase	5.43%

### Flat Brisket

#### Code: Brisket B001



**Description:** Flat Brisket is boneless and highly trimmed, maximum fat thickness 10 mm.

Weight	5.34 kg
Percentage of carcase	3.52%

### Blade (Chuck Tender) (Supraspinatus)

#### Code: Chuck B008



**Description:** The blade is a forequarter muscle and is ideal for slow cooking.

Weight	1.50 kg
Percentage of carcase	0.99%

### Feather (Infraspinatus)

### Code: Chuck B010



**Description:** The feather is a distinctive muscle with lots of flavour. It contains a thick gristle running through the middle of the joint and, when cooked slowly, the gristle will turn into jelly.

Weight `		2.46 kg
Percentage of carcase	`	1.62%

### LMC (single muscle) (Triceps brachaii caput longum)

#### Code: LMC B001



**Description:** A cut from the shoulder with very versatile usage.

Weight	3.31 kg
Percentage of carcase	2.18%

### Baby LMC

(Triceps brachaii caput laterale)

#### Code: FQ B004



**Description:** This cut is from the shoulder and is situated next to the LMC.

Weight	0.71 kg
Percentage of carcase	0.47%

The information in this brochure is based on a 303kg carcase (side weight 151.5kg), Classification R4H (after 2 weeks maturation).

### Underblade Muscle (Subscapularis)

#### Code: Chuck B021



**Description:** When trimmed of all connective tissue, this muscle is very tender and ideal for stir-fry, steaks or pavés.

Percentage of carcase	0.72%
Weight	1.09 kg

### Underblade Fillet (Teres minor)

#### Code: Chuck B022



**Description:** When trimmed of all connective tissue, this muscle is very tender and ideal for stir-fry, steaks or pavés.

Weight	0.43 kg
Percentage of carcase	0.28%

### Fore Shin

#### Code: Shin B003



**Description:** Trimmed of excess fat. This muscle is ideal for slow cooking.

Weight	2.05 kg
Percentage of carcase	1.35%

### Needle (Extensor carpi radialis)

#### Code: Shin B008



**Description:** The needle is a single muscle situated next to the fore shin muscle and is ideal for braising steaks, slow or sous vide cooking.

Weight	0.64 kg
Percentage of carcase	0.42%

### Clod Shin Muscle (Biceps brachaii)

#### Code: Shin B011



**Description:** The clod shin is a single muscle from the shoulder with a similar grain to shin, hence the name. It is ideal for slow or sous vide cooking.

Weight	0.60 kg
Percentage of carcase	0.40%

### Clod Flat Muscle (Brachialis)

#### Code: **FQ B006**



**Description:** This cut is from the shoulder and is situated next to the Baby LMC.

Weight	0.45 kg
Percentage of carcase	0.30%

### Shoulder Brisket Muscle (Latissimus dorsi)

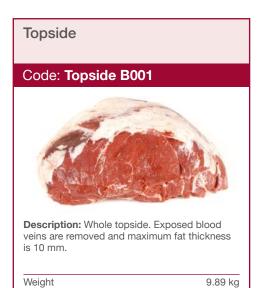
#### Code: FQ B008



**Description:** This muscle is the extension of the rib cap muscle and is attached to the LMC. The grain of the muscle is similar to the brisket, hence the name.

Weight	0.72 kg
Percentage of carcase	0.48%

The information in this brochure is based on a 303kg carcase (side weight 151.5kg), Classification R4H (after 2 weeks maturation).



Percentage of carcase



Percentage of carcase

6.38%











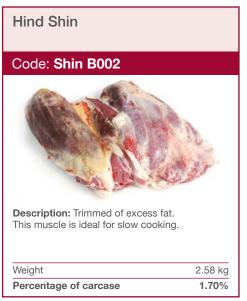


The information in this brochure is based on a 303kg carcase (side weight 151.5kg), Classification R4H (after 2 weeks maturation).

6.53%





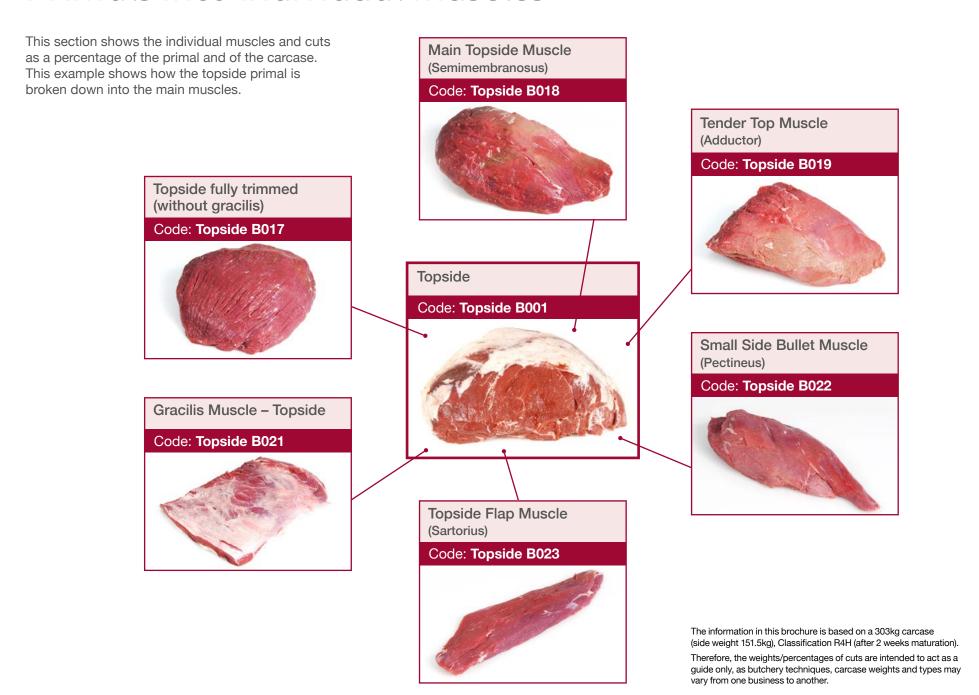


Fat	
Weight Percentage of carcase	8.75 kg <b>5.78</b> %
Bone	
Weight	24.49 kg
Percentage of carcase	16.17%

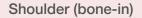
Primal cuts as a percentage of the carcase		
Cut	Code	% of carcase
Neck	Chuck B033	2.59
Chuck Roll	Chuck B002	4.75
Fore Rib bone-in	Fore Rib B001	5.43
Blade (Chuck Tender)	Chuck B008	0.99
Feather	Chuck B010	1.62
LMC (single muscle)	LMC B001	2.18
Underblade Muscle	Chuck B021	0.72
Underblade Fillet	Chuck B022	0.28
Flat Brisket	Brisket B001	3.52
Fore Shin	Shin B003	1.35
Clod Shin Muscle	Shin B011	0.40
Clod Flat Muscle	FQ B006	0.30
Baby LMC	FQ B004	0.47
Shoulder Brisket	FQ B008	0.48
Needle	Shin B008	0.42
Topside	Topside B001	6.53
Silverside	Silverside B001	6.38
Thick Flank	Thick Flank B001	4.22
"D" Rump (without tail)	Rump B004	3.95
Rump Tail	Rump B012	0.94
Striploin	Sirloin B002	4.49
Fillet	Fillet B001	1.92
Thin Flank (boneless)	Thin Flank B009	6.66
Heel Muscle	Leg B001	1.74
Hind Shin	Shin B002	1.70
Trim 85% VL	Trim B019	11.41
Fat	-	5.78
Bone	-	16.17
Drip/cutting loss (2 weeks maturation)	-	2.61
Total		100

The information in this brochure is based on a 303kg carcase (side weight 151.5kg), Classification R4H (after 2 weeks maturation).

### Primals into individual muscles



### Shoulder muscles



#### Code: FQ B001



Description: Bone-in shoulder of beef.

Weight	22.10 kg
Percentage of carcase	14.59%

### Shoulder (boneless)

#### Code: FQ B002



Description: Boneless shoulder of beef.

Weight	17.06 kg
Percentage of bone-in primal	77.19%
Percentage of carcase	11.26%

### Blade (Chuck Tender) (Supraspinatus)

#### Code: Chuck B008



**Description:** The blade is a forequarter muscle and is ideal for slow cooking.

Weight	1.51 kg
Percentage of bone-in primal	6.79%
Percentage of carcase	0.99%

### Feather (Infraspinatus)

#### Code: Chuck B010



**Description:** The feather is a distinctive muscle with lots of flavour. It contains a thick gristle running through the middle of the joint and, when cooked slowly, the gristle will turn into jelly.

Weight	2.46 kg
Percentage of bone-in primal	11.13%
Percentage of carcase	1.62%

### LMC (single muscle) (Triceps brachaii caput longum)

#### Code: LMC B001



**Description:** A cut from the shoulder with very versatile usage.

Weight	3.31 kg
Percentage of bone-in primal	14.98%
Percentage of carcase	2.18%

### Baby LMC (Triceps brachaii caput laterale)

#### Code: **FQ B004**



**Description:** This cut is from the shoulder and is situated next to the LMC.

Weight	0.71 kg
Percentage of bone-in primal	3.21%
Percentage of carcase	0.47%

### Underblade Muscle (Subscapularis)

#### Code: Chuck B021



**Description:** When trimmed of all connective tissue, this muscle is very tender and ideal for stir-fry, steaks or pavés.

Weight	1.09 kg
Percentage of bone-in primal	4.93%
Percentage of carcase	0.72%

### Underblade Fillet (Teres minor)

#### Code: Chuck B022



**Description:** When trimmed of all connective tissue, this muscle is very tender and ideal for stir-fry, steaks or pavés.

Weight	0.43 kg
Percentage of bone-in primal	1.95%
Percentage of carcase	0.28%

The information in this brochure is based on a 303kg carcase (side weight 151.5kg), Classification R4H (after 2 weeks maturation).

### Shoulder muscles



#### Code: Shin B003



**Description:** Trimmed of excess fat. This muscle is ideal for slow cooking.

Weight	2.05 kg
Percentage of bone-in primal	9.28%
Percentage of carcase	1.35%

### Needle (Extensor carpi radialis)

#### Code: Shin B008



**Description:** The needle is a single muscle situated next to the fore shin muscle and is ideal for braising steaks, slow or sous vide cooking.

Weight	0.64 kg
Percentage of bone-in primal	2.90%
Percentage of carcase	0.42%

### Clod Shin Muscle (Biceps brachaii)

#### Code: Shin B011



**Description:** The clod shin is a single muscle from the shoulder with a similar grain to shin, hence the name. It is ideal for slow or sous vide cooking.

Weight	0.60 kg
Percentage of bone-in primal	2.71%
Percentage of carcase	0.40%

### Clod Flat Muscle (Brachialis)

### Code: FQ B006



**Description:** This cut is from the shoulder and is situated next to the Baby LMC.

Weight	0.45 kg
Percentage of bone-in primal	2.04%
Percentage of carcase	0.30%

### Shoulder Brisket Muscle (Latissimus dorsi)

#### Code: FQ B008



**Description:** This muscle is the extension of the rib cap muscle and is attached to the LMC. The grain of the muscle is similar to the brisket (hence the name).

Weight	0.72 kg
Percentage of bone-in primal	3.26%
Percentage of carcase	0.48%

The information in this brochure is based on a 303kg carcase (side weight 151.5kg), Classification R4H (after 2 weeks maturation).

### Chuck roll muscles and cuts

#### Chuck Roll

#### Code: Chuck B002



**Description:** The chuck roll is a versatile muscle and can be used for a slow cooked roast, steaks or dice.

Weight	7.19 kg
Percentage of carcase	4.75%

### Denver Muscle (Serratus ventralis)

### Code: Chuck B034



**Description:** The Denver muscle (serratus ventralis), also called the spider muscle, with discoloured tissue, gristle and excess fat removed.

Weight	2.36kg
Percentage of primal	32.82%
Percentage of carcase	1.56%

### Chuck Eye 'Centre Cut' Joint

#### Code: Chuck B026



**Description:** This joint has a smaller diameter than the Chuck Eye Joint and is ideal for a slow roast.

Weight	2.76 kg
Percentage of primal	38.38%
Percentage of carcase	1.82%

### Rib Eye Fillet (Longissimus dorsi)

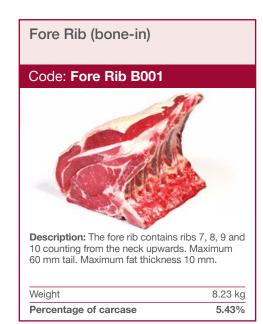
#### Code: Chuck B027



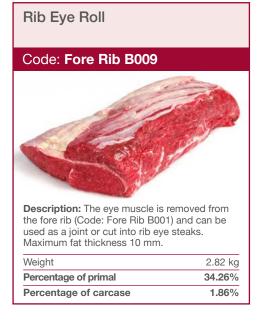
**Description:** The rib eye fillet is the continuation of the rib eye situated in the chuck.

Weight	0.38 kg
Percentage of primal	5.29%
Percentage of carcase	0.25%

### Fore rib muscles and cuts



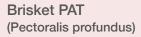






### Brisket muscles





### Code: Brisket B012



**Description:** This is the single brisket muscle with the cap removed. Trimmed of all excess fat and gristle.

Weight	2.80 kg
Percentage of primal	52.43%
Percentage of carcase	1.84%

### Brisket Cap Muscle (Pectoralis superficialis)

### Code: Brisket B013

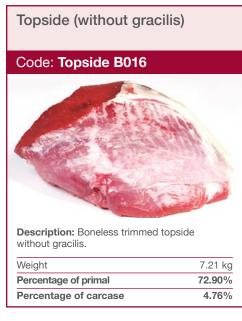


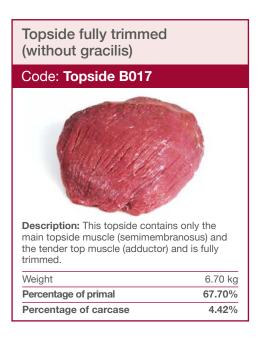
**Description:** The cap muscle is a single muscle removed from the brisket and trimmed of all excess fat and gristle. The meat has a coarse texture/grain and needs slow, long cooking.

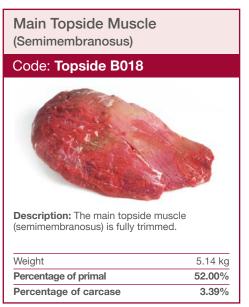
Weight	1.30 kg
Percentage of primal	24.34%
Percentage of carcase	0.86%

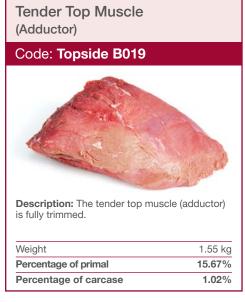
# Topside muscles











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# Topside muscles

### Gracilis and associated muscles – Topside

### Code: Topside B020



**Description:** This group of muscles contains the gracilis, pectineus and sartorius.

Weight	2.37 kg
Percentage of primal	23.96%
Percentage of carcase	1.56%

### Gracilis Muscle - Topside

### Code: Topside B021



**Description:** This muscle is positioned on top of the topside.

Weight	1.33 kg
Percentage of primal	13.45%
Percentage of carcase	0.88%

### Small Side Bullet Muscle (Pectineus)

### Code: Topside B022



**Description:** This muscle is positioned next to the tender top muscle (adductor) and is extremely tender.

Weight	0.55 kg
Percentage of primal	5.56%
Percentage of carcase	0.36%

### Topside Flap Muscle (Sartorius)

### Code: Topside B023



**Description:** This muscle is positioned between the topside muscles and the thick flank.

Weight	0.25 kg
Percentage of primal	2.53%
Percentage of carcase	0.17%

### Silverside cuts

Silverside (with silver gristle) (Gluteobiceps and semi tendinosus)

### Code: Silverside B009



**Description:** Whole silverside and salmon cut. Internal fat pockets are removed but silver gristle remains. Maximum fat level 15 mm.

Weight	9.66 kg
Percentage of carcase	6.38%

Silverside (without silver gristle) (Gluteobiceps and semi tendinosus)

#### Code: Silverside B001



**Description:** Whole silverside and salmon cut. Internal fat pockets and silver gristle are removed. Maximum fat level 15 mm.

Weight	9.45 kg
Percentage of primal	97.82%
Percentage of carcase	6.24%

Silverside (without Salmon Cut)

### Code: Silverside B011



**Description:** Whole silverside without the salmon cut. Internal fat pockets and silver gristle are removed. Maximum fat level 15 mm.

Weight	6.38 kg
Percentage of primal	66.05%
Percentage of carcase	4.21%

Salmon Cut (Silverside Round) (Semi tendinosus)

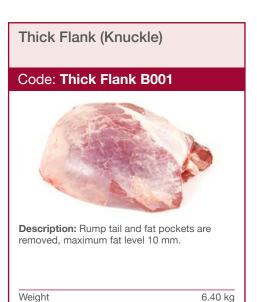
### Code: Silverside B010



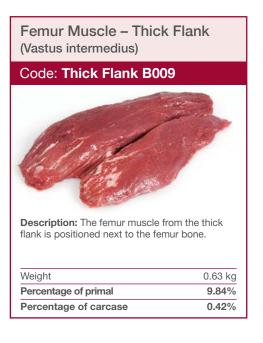
Description: Maximum fat level 15 mm.

Weight	2.80 kg
Percentage of primal	29.00%
Percentage of carcase	1.85%

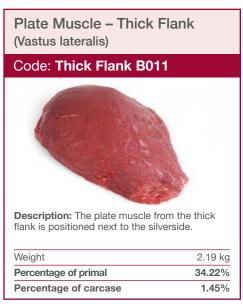
# Thick flank muscles











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# Rump muscles

'D' Rump (without tail)

### Code: Rump B004



**Description:** This rump contains no rump tail. Maximum fat thickness is 10 mm.

Weight	5.99 kg
Percentage of carcase	3 95%

Rump Cap (Picanha) (Part of the Gluteobiceps)

### Code: Rump B015



**Description:** This rump cap muscle/picanha is removed from a traditional rump and is therefore smaller than the rump cap (picanha) – large cut (Code: Rump B016). Fat level not to exceed 10 mm.

Weight	1.44 kg
Percentage of primal	24.00%
Percentage of carcase	0.66%

Prime Rump (Larger part of the Gluteus medius including the Gluteus accessorius)

### Code: Rump B018



**Description:** This rump has the cap muscle/picanha (Code: Rump B015) and the bistro muscle (Code: Rump B019) removed. Fat level not to exceed 10 mm.

Weight	2.54 kg
Percentage of primal	42.40%
Percentage of carcase	1.68%

Rump Bistro Muscle (Smaller part of the Gluteus medius)

### Code: Rump B019



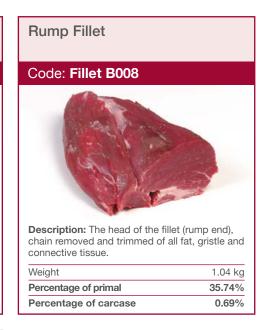
**Description:** This premium muscle comes from the most tender part of the rump and contains no gristle.

Weight	1.18 kg
Percentage of primal	19.70%
Percentage of carcase	0.78%

### Fillet muscles and cuts











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### Sirloin muscles and cuts

### Striploin

#### Code: Sirloin B002



**Description:** A 3-rib boneless sirloin with the flank removed 40 mm from the tip of the eye muscle. 25 mm backstrap is removed and fat level is not to exceed 10 mm.

Weight 6.80kg
Percentage of carcase 4.49%

### **Larder Trim Sirloin**

#### Code: Sirloin B015



**Description:** A 3-rib boneless sirloin with the flank removed 25 mm from the tip of the eye muscle. 60 mm backstrap is removed and fat level is not to exceed 5 mm.

Weight	5.34kg
Percentage of primal	78.53%
Percentage of carcase	3.52%

### Top Sirloin Pavé (Gluteus medius)

### Code: Sirloin B013



**Description:** Seam cut from the rump end of the sirloin with the natural thin layer of fat still attached. All gristle is removed. Ideal as a single portion.

Weight	0.28 kg
Percentage of primal	4.12%
Percentage of carcase	0.18%

### Lower Sirloin Pavé (Longissimus dorsi)

#### Code: Sirloin B014



**Description:** Seam cut from the rump end of the sirloin with all gristle and fat removed. Can be used for pavés, minute steaks or stir-fry.

Weight	0.18kg
Percentage of primal	8.24%
Percentage of carcase	0.37%

# Thin flank muscles

10.09 kg

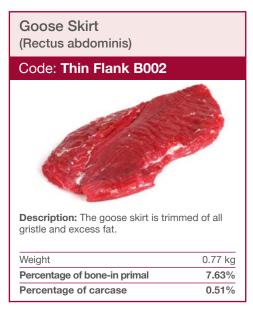
6.66%





Percentage of carcase

0.95%





Weight

Percentage of carcase

### Heel muscle and hind shin muscles



### Code: Leg B001



**Description:** The heel muscle is trimmed of excess fat. This muscle is ideal for slow cooking and is similar to shin meat.

Weight	2.63 kg
Percentage of carcase	1.74%

### Pencil Muscle (Flexor digitorum superficialis)

### Code: Leg B003



**Description:** This muscle is part of the heel muscle and is similar to the shin muscle structure.

Weight	0.53 kg
Percentage of primal	20.15%
Percentage of carcase	0.35%

### Heel Muscles for Pavé (Gastrocnemius)

### Code: Leg B002



**Description:** These two muscles are extremely tender and suitable for pavés.

Weight	0.96 kg
Percentage of primal	36.50%
Percentage of carcase	0.63%

### Heel Muscle for Braising (Gastrocnemius)

### Code: Leg B002



**Description:** While tender, this muscle has some connective tissue running through it and is more suitable for braising.

Weight	0.69 kg
Percentage of primal	26.24%
Percentage of carcase	0.46%

#### **Hind Shin**

### Code: Shin B002



**Description:** Trimmed of excess fat. This muscle is ideal for slow cooking.

Weight	2.58 kg
Percentage of carcase	1.70%

#### **Prime Hind Shin Muscle**

(Peronaeus terius, extensor digitorum longus, extensor digiti terii proprius)

### Code: Shin B007



**Description:** This muscle is the thickest muscle in the hind shin and ideal for slow cooking methods.

Weight	0.90 kg
Percentage of primal	34.88%
Percentage of carcase	0.59%

The information in this brochure is based on a 303kg carcase (side weight 151.5kg), Classification R4H (after 2 weeks maturation).

### Produced for you by:

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